OCTOBER
1950

fueloil & oil heat

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WHERE MIXED LOADS ARE HANDLED

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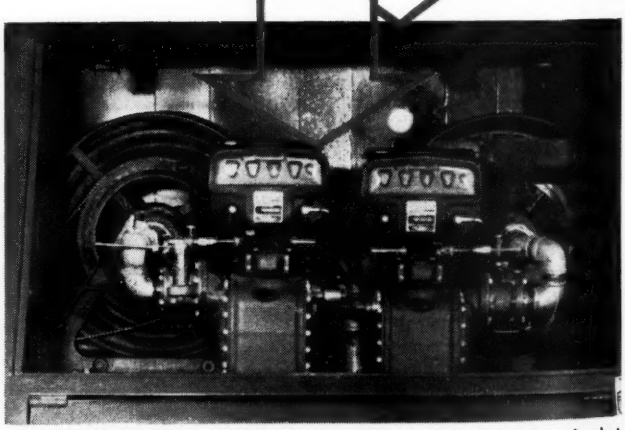
DUAL METERING SYSTEM

With *safety* a first consideration, the hazard of mixed loads can safely be avoided by installing *Brodie Dual Fuel Metering System* in new or existing tank trucks. This is particularly important on farm routes, and in neighborhoods where gasoline and burner oil accounts are served on the same trip. In addition, Brodie Meters make extra savings in time, mileage, manpower and gallonage—allowing more deliveries per truck, at a lower cost per gallon. For full details, diagrams and piping arrangements, write for Brodie Bulletin 200B, today.



Top: Brodie Dual Fuel Metering System installed in side bucket compartment by L. J. O'Day Equipment Company of Fargo, North Dakota.

Bottom: Two Brodie BiRotor Meters installed in rear compartment by R. V. Seaman Co., Saginaw, Detroit and Grand Rapids, Michigan.

BRODIE DEPENDABLY ACCURATE METERS

RALPH N. BRODIE CO., INC. 61ST & LOWELL, OAKLAND 8, CALIFORNIA, U.S.A.

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302 SOUTH PEARL ST., DALLAS 1, TEXAS • 221-9TH AVE. NORTH, SEATTLE 9, WASH. • *REPRESENTATIVES AND STOCKS IN ALL PRINCIPAL CITIES*

OCTOBER fueloil & oil heat 1950

VOLUME 9 Number 10

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YEARLY: $3.00

CANADIAN: $4.00

SINGLE COPY: 35¢

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PUBLISHED MONTHLY
BY HEATING PUBLISHERS, INC., 232 MADISON AVE., NEW YORK 16, N. Y., SUCCESSOR TO FUELOIL JOURNAL (1922) AND AIR CONDITIONING & OIL HEAT (1928), OCTOBER, 1950.

LEOD D. BECKER, *Chairman, Board of Directors*

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Among other things in this issue . . .

It has taken a good while to get the boys down at Baltimore to complete the series on rotary oilburners, but they have done it now, and this installment winds up the task. In the past couple of years we have had a series on vaporizing burners, then low pressure burners and now rotary. The first two have been reprinted in booklet form, the rotary series will soon.

Andrews is back in this issue, for the third time in four years, with the composite opinion of 300 sales specialists that the oilburner business is facing another good year . . a five-star rating they call it.

The announcement of the contest winners along with the winning entries is naturally the most significant feature in the issue. This Useful Ideas Contest was perhaps unique as such things go. It kept the bosses and brass hats out; only employees were eligible, and they made a fine showing.

THE COVER PICTURE was snapped by the editor in the Fitzgibbons Boiler factory up at Oswego, N. Y., during the late summer rush. Seven cars of steel arrived that day, spread good humor.

4 down 5 yds. to go

. . . numbers make it clear

Through habit, people grasp a situation at a glance—by numbers. Custom has made *numbers* the accepted method that measures and explains . . . quickly, accurately. It is the modern method, the method people everywhere prefer—the method they expect.

When home owners check their oil supply they want to know how many gallons they have left. Numbers tell them instantly . . . correctly. And when they want to estimate how much oil they use, numbers make it easy. Only *Galongage* tells the story the simple, easy way to which people are accustomed.

Remember, the gauge is the part of an installation your customers see most often. So do credit to a first-class installation. Be sure you follow through by supplying a first-class gauge.

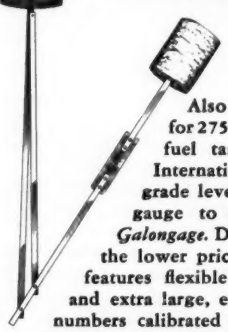
Gauges by Applied Mechanics Company have a long-standing reputation for accuracy and dependability. Efficient quality construction practically eliminates unprofitable service calls and bothersome adjustments. Write today for full particulars.

FIL-THRU For 55-Gallon Oil Drums

Gauge, vent and fill-pipe all in one. Installed without tools of any sort. With FIL-THRU user knows at a glance when to order and fill man can tell how much is required. Rugged, rainproof and non-corrosive. Clean and convenient for consumer and oil man.

GALONGAGE **The only gauge generally used that measures in gallons. Designed to meet the most exacting requirements and do credit to the finest installation. Comes fully assembled to save installation charges. Calibrated for each standard size 275-250 and 220-gallon tank with depths of 44", 42", 27" and 26", with 1½" or 2" tank openings.**

INTERNATIONAL



Also calibrated for 275-gallon size fuel tanks is the International, a high grade lever arm type gauge to team with *Galongage*. Designed for the lower priced field, it features flexible float arm and extra large, easy-to-read numbers calibrated in eighths. Built oil-tight at the factory for immediate and easy installation.

APPLIED MECHANICS COMPANY

167 OLIVER STREET, BOSTON 10, Mass.

Names in the News

C. V. *Travis* has been appointed Eastern Division sales manager for Blackmer Pump Co., Grand Rapids, Mich. *F. P. Goertz* will be associated with Mr. Travis in the 17 Murray St., New York office, directing sales and service for Blackmer in the Newark, N. J., district of the Eastern Division. Expanded customer service through more extensive jobber stocks of rotary industrial and petroleum power, hand and truck pumps.

Leslie W. Algar has become assistant sales manager, Sid Harvey, Inc., Valley Stream, N. Y., an office created because expanding business made it necessary to divide sales supervision of the Long Island territory and the company's Jamaica, N. Y., New Rochelle, N. Y., and Bridgeport, Conn. branch offices. Assistant sales manager *Jack Deyo*, who formerly handled the entire area, now will supervise Long Island sales, Mr. Algar, the branch offices.

Lester W. Watson recently was appointed New England sales engineering representative for Fireye Equipment by Combustion Control Corp., Cambridge 42, Mass. A graduate of Tufts College with a B.S. degree in Physics, Mr. Watson has an extensive background in the design and application of electronic equipment and is a member of the Institute of Radio Engineers.

John J. Cotter has been appointed general sales manager, General Fittings

Dealers with an *Eye for Profits* choose FLUID HEAT!

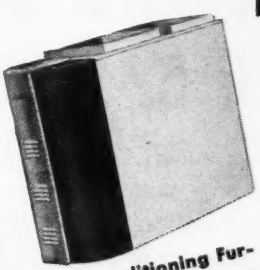
LOOK into a Fluid Heat Franchise and you'll see why dealers everywhere are enthusiastic about the new high profits they're making from this red-hot line of oil burners! Fluid Heat gives you the *extra* features you need to clinch a sale in today's competitive market . . . such modern heating developments as the "Fuel Saver" Control, "Flameflex" Hearth Ring and C. A. C. (Continuous Air Circulation).

BIG, COMPLETE LINE BRINGS YOU MORE SALES ADVANTAGES!

Boiler Burner Units, 6 models, from 300 to 1090 square feet of standing steam radiation.

Wall Flame Rotary Burners, 2 models with firing rates from ½ to 4½ gallons per hour.

Pressure Burners, 4 models with firing rates from 7/10 to 12 gallons per hour.



Air Conditioning Furnaces, 5 models, from 70,000 to 200,000 B.T.U. per hour.

SEE for yourself how you can *make more money* selling the big Fluid Heat line! Fill in the coupon and mail it to us for full information on the Fluid Heat Franchise plan . . . plus complete details on how our great new national advertising and merchandising campaign brings customers into your place of business! *Do it now!*

There's still time to Cash in on FLUID HEAT'S Advertising and Merchandising

Unique new national advertising sends customers directly to you! Free newspaper mats, radio scripts and other sales aids help you make your place of business Heating Headquarters in your community! Mail the coupon now for complete details!

fluid heat
AUTOMATIC OIL HEATING
"WORLD'S ECONOMY CHAMPION"

FLUID HEAT DIVISION, Anchor Post Products, Inc.
6700 Eastern Ave., Baltimore 24, Md.

Please rush me full details on a Fluid Heat Franchise . . . and on Fluid Heat's Advertising and Merchandising Program!

Name.....

Address.....Zone.....State.....

City.....

fueloil & oil heat

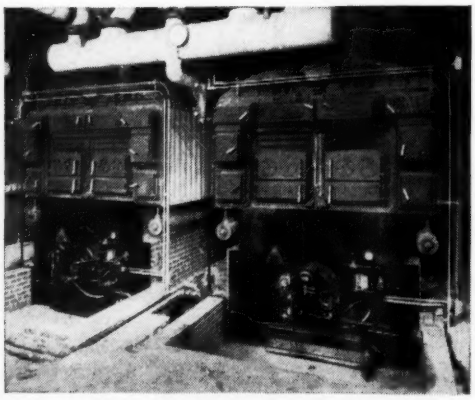
Hold it!

you don't need a Tall Chimney with an H. B. SMITH BOILER

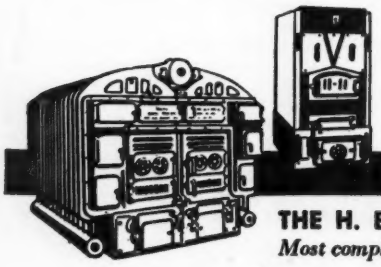
To keep the lines of that modern functional school within the proper architectural proportions — and to give your client truly outstanding heating plant performance — we suggest an H. B. Smith boiler.

The vertical water tube design of H. B. Smith boilers provides minimum draft resistance. Hot gases rise naturally between the boiler sections before entering the side flues. This positive gas travel is an advantage not found in boilers of the return-flue or long-fire-tube type, in which draft loss through the boiler is much greater. Tall chimneys or complicated induced-draft controls are, therefore, not necessary with H. B. Smith boilers.

For added assurance of economy of operation and long-life performance in schools or other buildings, consider the many, many installations in older schools where H. B. Smith Cast Iron Boilers have been giving top performance for 25, 35, even 50 years! You can recommend an H. B. Smith boiler for the life of the building!



A modern school equipped with No. 60 Smith Boilers.



H. B. Smith

CAST IRON BOILERS

THE H. B. SMITH CO. INC., WESTFIELD, MASS.

Most complete line in the world of cast iron boilers for heating

Co., Providence 5, R. I. His wide experience in the industry qualifies him to offer assistance and cooperation to General's customers with their water heater problems.

William J. Latch, Jr., has been appointed manager of the Baltimore branch sales office, National Radiator Co., Johnstown, Pa., succeeding Lester R. Snyder, deceased. Mr. Latch joined National in Baltimore in 1936, advanced to chief clerk of the branch in 1937 and layout engineer in 1938. In 1939 he was named a sales engineer.

Martyn Kingsland has been named commercial division sales manager for the northwest region and *Stanley Furber* supervisor of instrument and zone con-

Kingsland Furber

trol markets, Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. Mr. Kingsland joined the company in 1934, Mr. Furber in 1936.

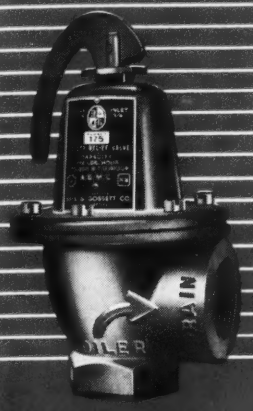
Donald W. Solis has been appointed assistant manager of national sales, Cities Service Oil Co., New York, N. Y. Formerly manager of industrial sales in the Boston regional office, he has been at that office since he joined the company in 1934, except for three years active duty in the Navy.

Samuel H. Elliott, formerly general manager of the Transportation Dept., Standard Oil Co. (Ohio), Cleveland 15, Ohio, advanced on September 1 to the position of general sales manager. At the same time, *Charles E. Spahr*, Mr. Elliott's assistant for several years, became manager of the Transportation Dept. Mr. Elliott has spent his entire business life with Standard, joining the company in 1929. He was elected a vice president in 1946, a director in 1949 and will continue in both capacities. Mr. Spahr has been with the company for eleven years, including a period of four years in the U. S. Army.

NEW RELIEF VALVES!

BUILT TO ASME CODE...

TESTED AND RATED BY NATIONAL BOARD

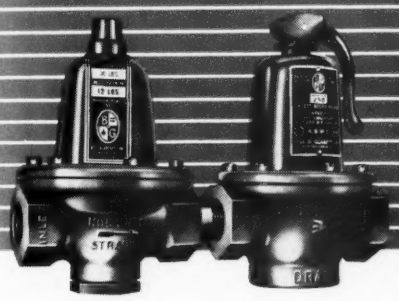


No. 175 Relief Valve

Catalog Number	Size	Capacity	Max. Setting
175	¾"	175,000 BTU/HR	30 LBS.

Nos. 250-499 Relief Valves

Catalog Number	Size	Capacity	Max. Setting
250	¾"	250,000 BTU/HR	30 LBS.
499	¾"	500,000 BTU/HR	30 LBS.



Nos. D-175 and D-250 Dual Unit Valves

Catalog Number	Conn. Sizes	Capacity Relief Valve	Max. Setting
D-175	½" MAKE-UP WATER ¾" BOILER 1" DRAIN	175,000 BTU/HR	30 LBS.
D-250	½" MAKE-UP WATER ¾" BOILER 1" DRAIN	250,000 BTU/HR	30 LBS.

Reducing valve is factory-set at 12 lbs.

No. 1000 Relief Valve

Catalog Number	Size	Capacity	Max. Setting
1000	1½"	1,000,000 BTU/HR	30 LBS.

These new B & G Relief Valves are designed and built to comply with the requirements of the ASME Code and are entitled to be labelled with the appropriate code symbol.

This is important to you since many cities and states are requiring ASME rated relief valves which have capacities equal to or greater than the maximum output of the boiler.

B & G Relief Valves with ASME ratings offer these features in excess of Code requirements:

1. They are not "pop" type valves. Diaphragm operation transmits more power during opening and closing of valve.
2. No guides on discharge side to stick or jam.
3. New low differential of not to exceed three pounds between opening and closing pressures.
4. Ground and polished metal-to-metal seats. Age or use will not deform them.

Wide range of capacities permits close matching of relief valve capacity to boiler load. Be sure to examine this new line of B & G Valves before you buy again.

B & G

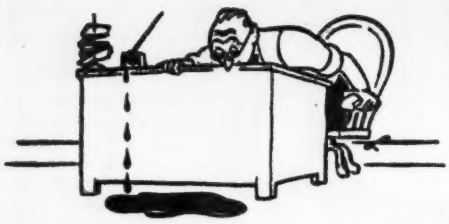
Hydro-Flo PRODUCTS

Forced Hot Water Heating Systems . . . Water Heaters . . . Centrifugal Pumps . . . Heat Exchangers . . . Refrigeration Equipment

BELL & GOSSETT COMPANY

Dept. BT-7, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong Ltd., 1400 O'Connor Road, Toronto, Canada



Editorial Leaks

Alone one evening at the Mayflower in Washington, a chance acquaintance turned out to be a Mr. Pullman, agricultural engineer. He had covered the world many times in his specialty of agricultural pest control. He now works with the Department of Agriculture and farm colleges over the country.

He is working with G-E at Schenectady on a type of light thrown on a special paint that attracts the bugs from considerable distances by radiation.

He pointed out that men haven't scratched the surface yet in knowledge about radiation, any kind of radiation.

Pullman has a corn and hog farm in Iowa. Last summer he took out to Iowa several tobacco moths from North Carolina. He first stained a wing of each for identification, just in case there might be some stray tobacco moths in Iowa.

Then he placed a female moth in a wire cage on the dining table. He took seven male moths in his car and released one each mile for seven miles. Before evening all were back on the outside of the wire cage, stained wings and all.

The next day he placed a lead grid over the wire cage, then repeated the process of releasing the males out to the seven mile point. Not one was ever seen again. The lead had stopped the rays.

◈

Assembled in Atlantic City to study the entries in FUELOIL & OIL HEAT'S Useful Ideas Contest, the three judges were swapping oilburning experiences in the evening.

One described a call by one of his service men. As he approached the back door the housewife intercepted him. "Before you go to the basement," she started, "I want you to promise one thing . . . that you won't say anything about dumb women. Your office told me on the phone to measure the oil in the tank. They were waiting on the phone so I had to hurry. I couldn't find a stick high nor low so I used my husband's umbrella. It opened inside the tank; now how are we going to get it out?"

◈

You've got to hand it to the anthracite industry, or some men in it, for trying hard to achieve the impossible. The chart on page 10 shows what has happened to stoker sales in the last few years. In our consumer surveys, four out of five persons who have used a stoker wouldn't want another one.

Yet they keep hammering away. Here are some quotations from a printed instruction sheet for stoker salesmen, put out by the Lehigh Navigation Coal Co., Inc. The salesman speaking:

"Have you ever seen oil burn? It gives off plenty of smoke which spreads a film of greasy unburned carbon on walls, curtains and rugs. Unless your furnace is tighter than most you'll have trouble keeping your house clean.

"Even if all the oil smoke goes out your chimney, it will settle down on your house and sift in. And you will smell oil, too, particularly when it is delivered.

"You wouldn't like another shortage of oil, either.

"One more thing you ought to know. Oilburner jets clog and are hard to clean. You can expect plenty of service calls which cost money every time. Besides, your heat is interrupted. An oilburner takes a lot more service than a stoker and it wears out twice as fast." Whew!

Mr. Lehigh, you don't know the half of it!

◈

Mr. W. F. Earnest, Jr., testified before a special subcommittee of the House Committee on Public Lands, at its hearing on the Flood Bill. The bill proposed that the Government buy 10 million tons of anthracite each year and store it, just in case.

Mr. Earnest said in effect that this should be done because in the event of another war coal would again have to take over most of the nation's home heating load. The inference was that people would again convert from other fuels to coal in large numbers.

To refresh our memories, during World War II just 4.2% of the oil-heated homes were converted to coal, or one in 25. When restrictions were lifted they bounced back to oil so fast that you couldn't see them for the Btu's.

The bill was reported out of Committee 13 to 2. No one expects it to pass even if it reaches the floor. But the Pennsylvania congressmen have shown the folks back home that their hearts are right, come election.

◈

Senator William Benton of Connecticut offers a resolution that the Small Business Committee conduct "a full and complete inquiry into the adequacy of fueloil supplies for the coming winter."

Could it be that by making fueloil look scarce in the headlines, the Federal Power Commission will expedite approval of the New England gas lines? That would please Benton.

◈

G.I.'s billeted in Korean homes will see one of the earliest forms of radiant heating. The Plumbing and Heating Industries Bureau points out that many Korean homes are heated by the warmth from wood fires which is circulated through pipes under the floors.

◈

Gas burner service may be free in a lot of markets but not in Westchester County, New York's plush suburb on the north. Quoted in the magazine GAS HEAT, one of the leading dealers in the area who sells both oil and gas burners has this to say:

"A gasburner installation we have made can gets a year's service for $20. Our oilburner customers pay $25 for the same service agreement. This includes summer clean-up and emergency service."

◈

Every period of stress or national emergency in Washington launches a crop of new words, or often familiar words suddenly become important. In late weeks the new word is "necessaries" . . . not necessities but necessaries. These are food, shelter, clothing and fuels. Most non-military activities sooner or later are screened through this word and its implications. Oilheating looks rather good in the process, being identified with two of the four necessaries.

APPLICATION FOR EMPLOYMENT

NAME: VENTALARM Whistling Tank Fill Signal

K. G.
Let's make decision on this fellow now
Put him to work on all old tanks.
S. L.

PERSONAL DATA:

Born at Scully Signal Company, Cambridge, Mass. Free from electrical wiring, electrical contacts, and floats. Install directly on the fuel oil tank as an integral part of the vent pipe.

TYPE OF WORK:

I whistle during oil deliveries until tank is properly filled. This prevents costly, damaging spills. Saves driver about 5 minutes per call or 2 hours per 24 stop day. Eliminates need for him to enter home. Avoids repeat calls. I also notify of any unsafe tank conditions such as clogged vent line, misplaced tank plug, etc. I give exact measurement for use in combination with degree day systems. Rated as AA-1 specialist in my work.

PRESENT EMPLOYMENT:

Currently employed by over 4000 major and independent oil companies throughout the country.

RECOMMENDATIONS:

One of my present employers says, "VENTALARM Signal has cut down our delivery time-per-stop an average of 33 1/3% and oil spillage is now unheard of." Another gives me credit for "25% increase in delivery ability, with same equipment." Still another says that I have cut their delivery time 12½% to an average of 13 minutes per drop.

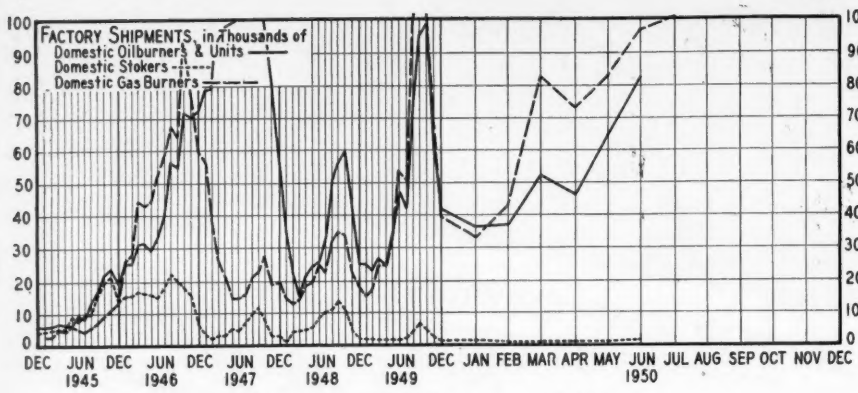
"One of the finest things ever invented for the fuel oil distributor", writes another kind employer. Then I can refer you to a man using me on old accounts who claims" a saving of from 5 to 7 minutes of delivery time per customer." You are cordially invited to check the source of these recommendations through Scully Signal Company.

WHEN IS APPLICANT AVAILABLE FOR WORK

Right now! Variety of models for new and old tanks found at regular Supply House or at Scully Signal Company.

SCULLY SIGNAL COMPANY
76 First Street, Cambridge 41, Mass.
Canadian Licensee, EMPIRE BRASS MFG. CO., LTD., London, Ontario

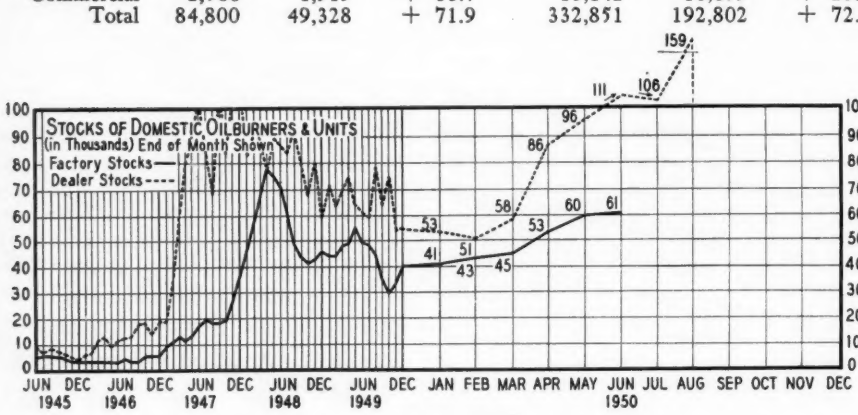
VENTALARM®
WHISTLING TANK FILL SIGNAL


FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Stokers
Domestic Gas Burners
DEC JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1945 1946 1947 1948 1949 1950

Shipments of Oilburners and Units
(Including Exports)

Adjusted to include manufacturers other than the 152 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	JUNE			SIX MONTHS		
	1950	*1949*	*Percent Change*	*1950*	*1949*	*Percent Change*
Conversion	58,573	34,272	+ 70.9	233,270	136,471	+ 70.9
Boiler units	8,906	5,591	+ 59.3	32,048	16,753	+ 91.3
Furnace units	14,755	7,546	+ 95.5	54,391	28,919	+ 88.1
All Domestic	82,234	47,409	+ 73.5	319,709	182,143	+ 75.5
Commercial	2,566	1,919	+ 33.7	13,142	10,659	+ 23.3
Total	84,800	49,328	+ 71.9	332,851	192,802	+ 72.6


STOCKS OF DOMESTIC OILBURNERS & UNITS
(in Thousands) End of Month Shown
Factory Stocks
Dealer Stocks
JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1945 1946 1947 1948 1949 1950

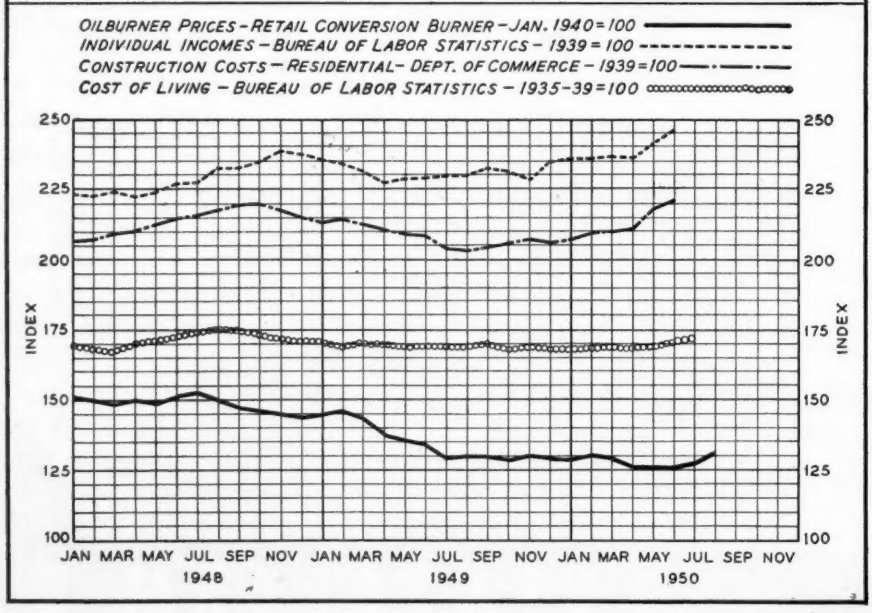
August Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS	BOILER-BURNERS	FURNACE-BURNERS
August Aver.	$307	$651	$578
July Aver.	304	642	571

Price Index: Conversion Burners: January 1940 is 100%

WHOLESALE				RETAIL			
August	128.8	Six months ago	122.8	August	130.8	Six months ago	130.1
July	125.0	Year ago	127.1	July	127.2	Year ago	130.4

OILBURNER PRICES COMPARED TO GENERAL INDEXES


OILBURNER PRICES - RETAIL CONVERSION BURNER - JAN. 1940 = 100
INDIVIDUAL INCOMES - BUREAU OF LABOR STATISTICS - 1939 = 100
CONSTRUCTION COSTS - RESIDENTIAL - DEPT. OF COMMERCE - 1939 = 100
COST OF LIVING - BUREAU OF LABOR STATISTICS - 1935-39 = 100
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JAN MAR MAY JUL SEP NOV JAN MAR MAY JUL SEP NOV JAN MAR MAY JUL SEP NOV
1948 1949 1950

Oilheating Trends

INSTALLATIONS of domestic oilburners and units during August are estimated at 109,671, a gain of 56% over the estimated 70,388 installed in the same month last year. Totals for eight months of the year are estimated at 464,175, up 47% from the 316,041 of 1949's same period.

August installations were divided: New homes 17,448; Replacements of old oilburners 5,484; Conversions from other fuels 86,739. For the eight months the similar division was: New homes 110,624; Replacements of old oilburners 50,440; Conversions from other fuels 303,111.

If the gain rate to date is projected to the end of the year, the total would pass 900,000 installations, but there are factors showing up, discussed later in this report, that call for conservatism.

BURNER STOCKS: Dealer stocks of domestic oilburners and units on September 1 were approximately 159,393, clearly an all-time high point. This compares with 105,716 at the end of July and 111,147 at the end of June. Dealers are certainly optimistic over the outlook, or else they are expecting prices to rise sharply and want to get under the wire. Factory prices actually are not up much as the wholesale index shows. They are only slightly higher than a year ago, though meanwhile they had sagged considerably and then climbed back.

TANK STOCKS: On September 1 customer oil tanks in dealer stocks were estimated at 99,802, a nice improvement over the previous month, which saw only 76,337. Of course they still are tight, but the rapidly rising price levels are getting a lot more made. The average price, nationwide, on September 1 for a 275 gallon basement type tank was $41, up $5 during the previous month, and up $15 from the June 1 average price of $26.

By another comparison, however, the showing was not so good. On August 1 dealer's tank costs were equal to 72% of their oilburner stocks. By September 1 this ratio had dropped to 63% in number of tanks related to burners.

The 99,802 tanks in stocks were divided for size as follows: 220-275 gallon 87,290; the 550-675 gallon sizes 8,028;

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For Below Water Line Service

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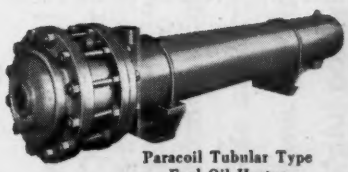
For Preheating Oil in Storage



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the 1,000 and larger sizes 4,484. Comparison with the figures published last month show that the gain was all in the small size group. Some new manufacturers have come into the market in the past few weeks, now that prices are lush.

It was interesting to observe the tie-up between the relative degree of scarcity and the cost of tanks in the various parts of the country. For example, in New England where tank stocks were equivalent in number to 73% of oilburner stocks, the price average was $40; in the Mid-Atlantic states the comparison was 61% and $44; in the Midwest 65% and $39; in the South 77% and $33; in the Pacific Northwest 39% and $41.

MANPOWER: This will become important later, but the problem is even now starting to show up in our industry. If the dealers who report for these monthly studies are typical of the industry, and we believe they are, then the armed forces have already taken about 1,100 men from the retail side of oilheating, including service and fueloil departments. Those men either volunteered, were drafted or were called up as reserves.

Another manpower consideration is just about as strong. The dealers have lost a little over 1,000 men to war industries, attracted by good pay and better deferment possibilities, they believe.

Coupled with the larger volume of business this year, these drains put some parts of the industry on a spot. Countrywide, more than half of all dealers badly need another good man or two for a total of more than 6,000. In other words there are that many good openings going begging among our dealers in early September—the situation will get tighter before it gets better again.

SALES RESISTANCE FACTORS: With burner sales hitting such high levels there is not much talk about sales resistance, although naturally we will always have some. Comparing their importance with earlier periods will often show trends that have a bearing on the future, as they may do this time.

Oilburner* and Building Permits

OILBURNERS					DWELLINGS			
August		8 MONTHS			August		8 MONTHS	
1950	1949	1950	1949		1950	1949	1950	1949
112	93	603	354	Albany, N. Y.	..	..	..	..
518	570	3402	3361	Baltimore, Md.	635	143	4171	1425
..	..	..	..	Binghamton, N. Y.	15	12	100	75
..	..	..	..	Bloomfield, N. J.	42	11	163	49
..	359	..	2678	Boston, Mass.	..	27	..	235
164	121	681	509	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, N. Y.	58	49	494	258
3	..	15	..	Columbus, O.	..	..	..	..
..	..	..	..	Des Moines, Ia.	181	113	1258	778
285	465	915	5181	Detroit, Mich.	902	1361	9809	7620
116	46	467	303	Elizabeth, N. J.	6	4	45	27
70	40	352	188	Freeport, N. Y.	..	..	..	..
..	..	..	..	Greenwich, Conn.	46	20	282	127
..	..	..	..	Hackensack, N. J.	57	7	160	37
97	120	1090	645	Hartford, Conn.	..	..	..	..
..	..	..	..	Hudson County, N. J.	..	..	..	..
73	39	416	183	Irvington, N. J.	5	1	42	16
..	..	..	..	Lynn, Mass.	26	32	137	139
32	22	431	191	Meriden, Conn.	..	..	..	..
357	454	1986	2152	Milwaukee, Wisc.	353	251	2529	1360
168	136	596	551	Minneapolis, Minn.	215	228	1546	1048
40	33	225	148	Montclair, N. J.	..	..	..	..
..	..	..	..	Morristown, N. J.	1	2	24	..
65	49	343	246	Mt. Vernon, N. Y.	..	..	..	..
..	200	..	956	Newark, N. J.	..	..	..	..
86	43	717	587	New Bedford, Mass.	..	..	..	..
113	56	410	300	New Haven, Conn.	..	..	..	..
..	..	..	..	New Orleans, La.	..	..	..	..
41	35	217	170	New Rochelle, N. Y.	22	3	138	34
4027	2535	21539	15318	New York City (total)	..	..	..	..
3099	1912	16852	11807	Brooklyn-Queens	..	..	..	..
928	623	4687	3511	Manhattan, Bronx, Rchd	..	..	..	..
110	172	827	904	Norfolk, Va.	173	48	966	462
..	..	..	..	Oakland, Calif.	..	..	..	..
..	122	..	580	Omaha, Neb.	190	90	1194	409
28	25	178	113	Orange, N. J.	1	0	14	..
57	34	272	197	Passaic, N. J.	..	..	..	..
158	98	748	465	Paterson, N. J.	14	18	157	78
2045	1151	8151	5235	Philadelphia, Pa.	..	..	..	..
..	..	..	..	Plainfield, N. J.	93	10	254	73
76	33	350	201	Portland, Me.	62	15	183	94
869	766	3857	4344	Portland, Ore.	323	193	1896	1380
31	36	122	120	Poughkeepsie, N. Y.	..	..	..	..
97	42	421	357	Providence, R. I.	24	23	232	116
..	..	..	..	Reading, Penna.	3	7	59	35
75	59	641	519	Richmond, Va.	53	35	554	501
76	..	809	..	Roanoke, Va.	..	..	..	..
500	164	2300	1282	Rochester, N. Y.	..	..	..	..
39	39	244	162	Rockville Center, N. Y.	23	6	132	70
71	32	270	173	Salem, Mass.	8	16	68	77
11	21	238	561	St. Louis, Mo.	81	52	752	329
..	229	..	1106	St. Paul, Minn.	175	85	1246	456
41	31	458	331	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Wash.	324	157	1998	1080
..	..	..	..	Springfield, Mass.	51	46	537	320
72	63	658	311	Stamford, Conn.	..	..	..	..
6	88	95	379	Syracuse, N. Y.	44	27	462	236
..	..	..	..	Trenton, N. J.	2	3	49	60
..	..	..	..	Utica, N. Y.	17	11	124	56
215	146	1011	712	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	64	18	312	95
34	30	219	132	White Plains, N. Y.	41	13	141	70
..	116	..	608	Wilmington, Del.	..	4	..	69
292	159	1403	899	Worcester, Mass.	..	..	..	..
106	60	561	323	Yonkers, N. Y.	..	..	..	..
11296	8206	56811	47753	*Totals*	4330	3110	31790	18990
+37.7		+19.0		*Percent Change*	+39.2		+67.4	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

Relative Importance of Sales Resistance Factors

	New Eng.	*Mid-Atl.*	*Mid-West*	*Pac. N. W.*	*Sept. 1950*	*May 1950*
Unsettled world condition	18%	26%	15%	22%	22%	..
Can't afford the payments	23	14	29	25	20	19%
Burner prices too high	13	23	13	21	19	31
Doubtful of oil supply	14	16	19	24	17	..
Oil price too high	22	13	14	8	14	17
Waiting to buy gas	10	8	10	..	8	10
Believe business will slump	..	..	..	..	..	18

The table shows some significant changes since this was last studied on May first this year. The unsettled world condition shows up for the first time, and moreover it's in first place. Then the question of oil supply, that old bugbear

(*Please turn to page* 143)

ANOTHER VOTE FOR

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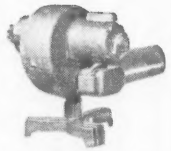
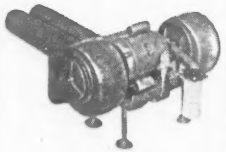
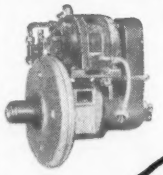
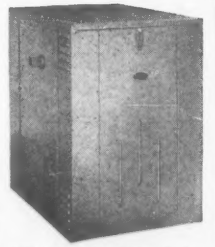
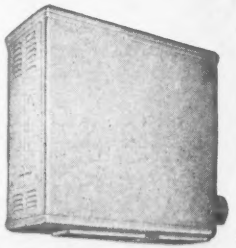
WITH PATENTED FUEL-HOARDING TURBULATOR

FOR SMALL TO MEDIUM SIZE HOMES	FOR BIGGER HOMES & SMALL COMM. BLDGS.	FOR LARGE HOMES AND INDUSTRIAL USE	FOR INDUSTRIAL USE	FOR HEAVY DUTY INDUSTRIAL HEATING	FOR STEAM, HOT WATER OR VAPOR SYSTEMS	FOR LOW COST WARM AIR HEATING
MODEL A-3	MODEL A-8	 MODEL A-18	 MODEL H-1-S	 HORIZONTAL ROTARY	 BOILER BURNER UNIT	 WINTER CONDITIONING UNIT

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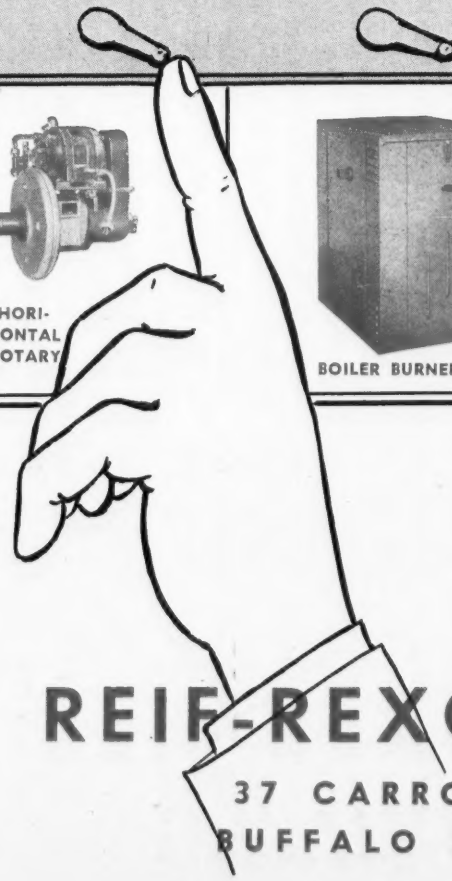

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Government Influences on Fuels

by
Milburn Petty

WASHINGTON — J. R. Parten (Ex-PAW) has agreed to help Secretary Chapman organize, staff and run—temporarily, at least—Interior Department's organization for handling its share of the controls on oil and gas under the Defense Production Act, or DPA as it is being called here.

Parten, who was PAW's transportation director, took the job (temporarily) on President Truman's insistence Earlier both Truman and Chapman had tried to get Ralph K. Davies (Ex-PAW) to accept it.

It's a safe bet that Parten insisted that there be a separate oil-gas setup patterned after PAW of the last war.

Presidential powers over oil, gas, coal and electricity under the DPA—(except price control and rationing) were delegated to Interior. A new, OPA-like agency will handle prices and rationing.

Interior now has the power to allocate supplies of all fuels, control their distribution and set priorities on their use—if necessary.

Bowles Urges Price Control Now

Despite urging by Governor Bowles (Ex-OPA), President Truman is likely to refrain from setting price ceilings until after the elections in November. First, the new Economic Stabilization Administration, has not been set up. Second, he doesn't want to irritate voters without more of a public clamor than there is now for price controls.

After the elections, better watch out. If price ceilings are set on any of the "necessaries," it will be like the first olive out of the bottle. Controls on oil prices will soon follow.

Oil Transportation Divided

Interior is still seeking to get control of all specialized forms of oil transportation, including tank trucks. Under the presidential order only pipelines went to Interior with tankers to Commerce Department and all else, including terminaling, to the ICC.

Mindful of the confusion that prevailed last time with several agencies contending for controls on oil transportation, Parten will strongly urge a vertical oil organization.

With Truman promising a free hand, Parten may win out on this. It is important because distribution controls would split down the middle otherwise.

New 'Wherry Formula' in Making?

Senator Benton of Connecticut is head of a Senate Small Business Committee to investigate the "adequacy" of the supply of all fuels in New England, particularly from the independent's standpoint. Back in the 1947-48 shortages, a similar subcommittee, headed by Senator Wherry of Nebraska, came up with a formula "persuading" suppliers to take care of their old customers, both spot and contract buyers.

Primarily, the study is to be concerned with fuel oil supply, with a gesture at coal. The group will also try to find out "what's holding up approval of the gas pipelines into New England." The report is due by December 15.

It has been freely speculated here that Benton wants to use this inquiry as a lever to force the Federal Power Commission to speed up its approval of the New England pipeline projects.

National Fuels Policy Studied

Senate Interior Committee has started a study of basic data available on all fuels, preparatory to launching its study to develop a national policy on fuels. Only $20,000 was voted for this study, with the report due early in February. So, not much can be accomplished except to lay the groundwork for suggesting a broader probe later.

Senator Thomas of Oklahoma was talked out of his objections to the move, sought by coal people. Apparently, oil-state senators decided that it would be impolitic to object to a mere inquiry.

Privately, industry representatives have expressed fear at what may develop since the committee seemingly had prejudged the situation by promising "many needed legislative recommendations," which might include "end use" controls on oil and gas.

The committee staff is now reviewing the fuel data collected by the Bureau of Mines as well as other congressional committees to see if all the necessary facts are available. It was pointed out that this study was something more than just a fact-finding investigation. Relationship of all fuels will be studied.

After a pattern has been developed, the committee will schedule hearings to take testimony from expert witnesses, both government and industry. However, this won't be for some weeks yet.

What worries both oil and gas representatives is that the new controls law gives the Truman Administration powers to implement, without further legislation, most any recommendation that this group may report out.

Texas Studies Fuel Oil Stocks

Texas Railroad Commission wants to be sure that the oil companies are prepared to meet next winter's fuel oil demands. Heads of all major companies have been invited to Austin on October 19 for their views on stocks levels.

"We are seeking to find out whether adequate stocks of heating oil have been prepared and laid up for the heavy peak-time winter demand in case we have a hard winter," said the Texas telegram, pointing out that provision must also be made for possible increased demands by the military.

Last spring, the consensus was that crude stocks should be 240,000,000 barrels at the minimum. Currently, stocks are about 3,000,000 barrels below this. The inference was that the minimum ought to be raised in view of changed conditions since then.

Plainly, Texas is seeking encouragement for maintaining oil allowables at or near the present record-high levels.

Interior Urges Fuel Fill-Up

Secretary Chapman, in a press release, has urged householders to buy and store their winter's fuel this fall. Only fuel mentioned was coal; shortage of cars was cited as a possibility.

At the moment, Chapman said, consumer stocks of fuel are reported generally adequate for this time of year and there are no shortages.

Outlook bright in new Economy

300 Man future sales rating Board again gives the Oilheating Industry five Stars

by
Peter B. B. Andrews*

A PERIOD OF HEAVY DEMAND for oilheating equipment is ahead, tempered only by the question of availability of materials for manufacturers.

Nevertheless, on the basis of materials likely to be obtained by these manufacturers and the anticipated demand, the writer and his 300-man board of future sales ratings associates have assigned the top rating of five stars for oilburner sales in the next twelve months.

In the main, the Future Sales Ratings judges base their rating for oilburner sales on the consensus belief that American business will operate as a fractional war economy; there will be a fairly adequate supply of raw materials for a high rate of manufacture; there will be an adequate supply of fueloil; and public employment and disposable personal income will continue to produce high buying power. Even housing is not expected to dip drastically, despite the drawbacks of new credit restrictions.

This year is likely to witness a new record in oilburner sales—in excess of 800,000 units, compared with 614,712 units for 1949. Given no radical war development to change the basic thinking, 1951 could surpass even the 1950 indicated record.

Such expectations are based on the writer's surveys among Government economists and trade authorities in the 300-man board which comprises Future Sales Ratings, a nationally famous organization which rates the 100 leading industries of the United States.

In these ratings the oilburner industry receives a sales prospect symbol of five stars for the next twelve months. That is the highest rating category, assigned by a board of completely impartial judges. Ratings of the full list of 100 industries are published quarterly by Sales Management.

Obviously, a heavy intensification of the war effort or a turn to all-out war would change the basic thinking of these sales analysts. The writer saw only too clearly during his service through the four years of World War II as industrial economic adviser to the War Production Board the many sacrifices which manufacturers of oilheating equipment had to make in an emergency switch to war work.

No Similarity to World War II

Today's situation, however, is believed not at all comparable with that of World War II. Only a few months after we entered that war, 50% of our total industrial effort was going into military production. Now, only a small fraction of the country's large manufacturing capacity is going into war goods. And, that capacity has been built up greatly since the end of the last war.

It is significant to observe that over $18,000,000,000 went into expenditures for new plant and equipment in this country during the year 1949, over $19,000,000,000 in 1948, over $16,000,000,000 in 1947, and $12,000,000,000 in 1946. That represents a tremendous expansion of productive facilities.

By comparison, expenditures for new plant and equipment in 1940 totaled $6,500,000,000; in 1939 they were $5,200,000,000, and in 1938 they totaled $4,500,000,000. We are a far bigger, and by reason of vast expansion into more modern plant in recent years, a much more efficient nation of industrial production than we were a decade ago.

Considering the size of our modern plant, it is believed that the military goods now called for can be produced with ease and with a leeway still permitting close to a record-breaking output of civilian machinery. At the moment we are turning out war goods at the annual rate of about $15,000,000,000, and the current goal of the fractional war economy is about $28,000,000,000, or only 10% of the gross national product of the country, now running at the rate of about $280,000,000,000 annually.

It may be noted for comparison that the gross national product in a good year like 1947 totaled $231,600,000,000, or almost $50,000,000,000 less than the current annual rate! This difference is not far from double the present projected annual rate of military expenditures.

There will be some sacrifices, naturally, even under the present program, as production for the military services rises, with some resultant deflationary effect on production of civilian goods. But, as matter stand now, there are enough materials for both a booming civilian economy and fulfillment of the current war schedule.

In steel, for example, one of the most essential of war materials, capacity has been expanded beyond 100,000,000 tons annually, compared with maximum needs of the present war schedule of only 6,000,000 tons. Some of the current shortage definitely is artificial. Thus, barring a full-scale war, and with a proper crackdown on hoarders and gray marketers, all military requirements should be handled with no great reduction in the manufacture of peacetime products.

Industrial Capacity Much Higher

Moreover, productivity, as well as capacity, is rising and will rise further. There is still some slack in the nation's producing ability. Even without an unusual increase in the labor force or in hours of work, the present material and human resources of the economy are sufficient to lift the nation's total production by the end of 1950 to an annual

*Mr. Andrews is an economic consultant to the National Security Resources Board, and during the last war was industrial economic adviser, War Production Board.

rate some $10,000,000,000 above the current rate, with further gains to be anticipated in 1951 and succeeding years.

An overnight change in the war situation naturally is an ever-present possibility, with the Federal administrative machinery now set to make a quick change to a higher fractional economy or an all-out effort. Even a sudden washing out of the Korean tangle would mean no letdown in defense preparations; we are now thoroughly aroused to the necessity of military upbuilding to meet all threats of new aggressions.

Scare Buying Slackens

War-scare buying and inventory-hoarding have tended to rock the economic boat, but Washington now has powers to crack down hard on hoarders, and to emphasize these powers, examples are sure to be made of some offenders. The writer discovered during his association with the War Production Board that the very large majority of businessmen are highly cooperative in sacrifices for the war effort; nevertheless, there always seems to be a small, tough core of uncooperative people who must constantly be watched and punished.

If unfair distribution of materials and goods prevails widely, then rationing and price controls would be used, even in a semi-war economy. Such controls often hit some people inequitably because of the base period used or because of special work being done. In such cases, we were always glad to listen to appeals for materials, and granted those that were legitimate and justified.

Many misunderstandings and undue fears arose on controls and appeals in World War II regulatory days, and we were pleased in all instances to attempt to clear them up. Many businessmen and manufacturers with vague misapprehensions discovered the Government reasonable if it fully understands a situation.

All views considered, then, it is not going to be as difficult to get materials for manufacture of oilburners as some people believe. Even housing is not going to take the dive that some have anticipated. Defense needs for the present fiscal year through June are currently expected to be no more than 1,500,000,000 board feet, or hardly one week's output at the current rate of production.

It is steadily becoming more evident that there is no need for builders to hoard materials, and if there is a reasonable cutback in the record pace of home construction in recent months there may be no need for the Government to institute priority or allocation programs in the current partial war economy.

The fueloil situation, moreover, is very sound, with supplies now held ample for all demands. Proved reserves of crude petroleum in this country have reached an all-time peak. At the end of 1949, reserves of crude oil alone totaled 24,649,000,000 barrels, compared with 23,280,000,000 barrels a year earlier.

Exploration was very active last year, and new reserves discovered in new and old fields were the largest since 1937 and more than twice the five-year average for 1944-48.

Demand is likely to be excellent, and the writer believes that manufacturers of oilheating equipment will be heavy advertisers in the present military economy. Even if it should become an all-out war economy expenditures will be heavy, for this industry remembers the experience of the last war when advertising dipped temporarily and then soared on to new heights. This time it would be unlikely even to dip, for the memory of how war stimulates advertising, and heavy advertising by the competition, still is fresh.

Advertising Deductible Expense

Just as in the early days of World War II, there is unwarranted concern among some people about what the Government may think of industrial advertising expenditures as a logical business expense before taxes, or whether the Government will attempt in some other way to control advertising.

For many years our nation has had a stimulated economy, and advertising has been the great stimulator. It is recognized that a time of emergency such as the present needs more than ever the spark which energizes American business. Advertising, therefore, will be considered by the Treasury Department as a legitimate expense deductible before taxes.

New tax laws will stimulate increases in advertising expenditures, since reasonable expenditures are deductible before taxes; not only will the recent rise in corporation taxes from 38% to 45% have this effect, but a great additional stimulant to industrial advertising would arise from the proposed excess profits tax, which to the writer looks inevitable for 1951, unless there is a miraculous turn in the war trend.

In any event, as the Future Sales Rating analysis shapes up now, manufacturers of oilheating products should have a great deal of equipment to sell in the twelve months ahead and a favorable market in which to sell it.

Anthracite companies plan $2,000,000 Campaign

WITHIN THE NEXT year, "Advertising Age" reports an estimated $2,000,000 will be spent by members of the anthracite industry to sell dealers on the idea of pushing coal stokers and to sell consumers on purchasing them. This, apparently, is the same campaign announced a month or two ago by Anthracite Institute, which appropriated $1,000,000 for it, and which was to be supplemented by an equal amount of promotion generated by individual companies.

The entire campaign reported by *Advertising Age* is built around the words, "automatic anthracite," with other phases of the program to stress safety, clean and smoke-free combustion. Major anthracite producers in recent months have been testing various approaches, with the tests for the most part conducted in coal districts to help sell the miners themselves on the advantages of heating with anthracite coal.

These companies, along with stoker manufacturers, are offering dealers complete promotion plans for the sale of anthracite and stoker equipment, along with direct mail pieces, local radio advertising campaigns, training of salesmen and planned advertising drives. Some companies have increased their field forces to render a more complete and timely service to dealers and nearly all are supplementing their dealer helps with substantial advertising programs in trade and consumer magazines.

Judges pick the Winners

Cash Awards in the $1000 Useful Ideas Contest go to Entries from nine States

FUELOIL & OIL HEAT'S Useful Ideas Contest closed August 31 with a splendid lot of entries from all over the country. Checks have been mailed to the twelve winners of first, second and third prizes in each of the occupation groups. Actually there were 13 checks sent out, because two men had an identical idea that was split for third place among fuel-oil truck drivers.

The other groups of entries were from service men, salesmen and office workers.

The judges put in a lot of hours studying the many suggestions. In several instances there were differences of opinion on the merits of ideas, and one entry was good for two hours of debate, to be finally voted down, two to one.

The selections were made on originality of thinking, on general usefulness to other dealers in the industry, even though some winners had only the rough germ of a good idea that called for more development.

The twelve winning entries are published in full in this issue. However, there is a lot of additional useful material to be printed in the later issues of the magazine. As these are published they will be identified with the author's name and address, and will be paid for at the rate of three cents a word, with a minimum of five dollars.

The splendid response from men in the industry in sending their good ideas has been heart warming to the editors. It was good enough to repeat in the not too distant future. Here are the winning successful ideas:

The contest Judges

The photograph at the top of the page shows, left to right, contest judges Tom Carson, George Clement and Herbert Spade. Each is general manager of the fueloil and oilheating division of a large Eastern marketer. Carson is with Sherwood Brothers, Baltimore; Clement gets his pay checks from Modern Heat & Fuel Co., Philadelphia; Spade masterminds for Robison Oil Co., Hartsdale, N. Y. They all came up from the ranks in their companies.

Office Employee

1st Prize: C. P. PARKER, W. R. MARRAN'S SONS, INC., MULFORD ST., PATCHOGUE, N. Y.

AS DEGREE-DAY dispatcher for a large fueloil company, I found that we came up against the "run-out" problem every spring and fall. A straight degree day system worked fine during the coldest months, I reasoned, because the error involved in neglecting the effect of wind, cloudy weather, snow on the roofs, etc., was such a small part of the total heat demand that it didn't really matter too much. But, in the spring and fall, when the heat demand was light, when the degree days per day were few, the variables became relatively larger and we ran into trouble. I tried adding additional degree days on to make up for this but it required human judgment which at best was poor and we ended up going to an account too often rather than take the chance of letting the customer run out. Not only did the customers object to our too frequent calls but also the drivers scorned our inefficient system.

This fall I decided to check the running time of five of our customers. We purchased five self-starting electric clocks and wired them parallel to the burner motors of each of these accounts. In each of these five homes, the customers cooperated by recording the time registered on the clock every morning at 7:30 (before going to work). A month later I compared reports and found that each day, all five running times varied in the same manner; and most important, these times did not vary directly with the number of degree days. Running times when broken down into "minutes per degree day" were highest when the degree days per day were fewest.

Carrying the experiment further I

found that so closely did the running times of all the check houses keep in step that it was possible to predict the running times of four houses, knowing the running time of the fifth burner. From here on in it was easy.

Taking the coldest days as a base, I found that the burner in house A ran 10 minutes per degree day, and that in house B it ran 11 minutes. The remaining checks were dropped because A & B proved to be representative enough to eliminate sampling errors.

Now, instead of checking the local weather station for the daily average temperature, I simply use the running times of these two burners (their owners call in every morning during the heating season at 8:00 o'clock).

For instance, if on April 16 house A reports 3 hours and 20 minutes operation and house B, 3 hours and 50 minutes, I divide A's time (200 minutes) by 10 for a total of 20 D D and B's time (230) minutes by 11 for a total of 21 D D. To be safe, I use the higher figure and record 21 DD on the DD log for April 15. The temperature might have averaged 50 degrees, but it no longer is necessary for me to compute 15 and then add 10 to be safe.

On March 15 we put my system for computing Degree Days per day into effect. The results have been better than even I had hoped. The "run-outs" no longer give me gray hairs and the drivers no longer have to make too frequent visits. In fact, the system is so accurate that we came close to averaging 190 gallons on our 275 tank deliveries this spring.

2nd Prize: THELMA SMITH,
458 NORTH 35TH ST.,
SEATTLE 3, WASH.

TODAY, when an office worker in our industry is hired, she is given duties, consisting mostly of clerical work. With no previous knowledge of the oil industry she is put to a task of familiarizing herself as best she can in picking up the terminology and knowledge of oil, heating equipment, service information and other essential knowledge. This is done in most cases by the "trial and error" method or when some well-meaning office worker finds time to drop a hint here or there about some phase of the business.

My suggestion is two-fold. First, as an office worker, I should be sold on the product we sell and produce. I should become familiar with the various information so that when I am questioned over the telephone, or in person by a customer, or even in the course of a discussion among friends during a social evening, I am able to know the difference, and that such exists between the P.S. (Pacific Specifications), and the E.S. (Eastern Specification), not the exact figures, but be able to explain the differences in oils, and their uses, a simple explanation of the processing of oil. I have been in the oil industry for 4 years, and many answers I am still caught with. We have a heating division, yet I do not know for certain what type of burners we sell, or the good points. Oil is delivered in trucks, that we know, but the various methods of refining or processing or storage before it is delivered is still a mystery to the average office worker. In order to sell, we must know and believe.

Educational Booklet

This is my solution: The Management could perhaps have made up in a simple form a booklet explaining the processing of oil from the time it leaves the oil fields until it is in the customer's tanks. Once a month, a short ½ hour talk could be given to the personnel on new developments in this field, and the Head of each department could take turns giving an interesting 15 minute talk on their department and its operation, and answer questions we might ask. An interesting tour to the nearest plant for storage, or loading might be interesting. Samples of the various kinds of oil should be bottled in visible containers, each labeled with its use and processes. These could be prominently displayed so that customers coming into the outer reception room should be able to see them. Pamphlets coming out periodically should be given to the office force as well as to the customers. This would keep us all informed.

Management should encourage the gain of new accounts drawn by other than the regular salesmen. We each can be a salesman 12 hours a day and not just an 8 hour job.

When new personnel comes into an office, it is usually a replacement. Often times, the person being replaced doesn't have the necessary time to break in a new employee, the work isn't the same over a period of a month. The employees who still are on the job, have to take over the problem of breaking in the new girl. Confusion sometimes results, from too many teachers or too few teachers. Replacements usually come through in the middle of the heating season when neither time nor patience are very possible.

This is my solution: Have each employee make a job classification of her own job. Listed should be each duty, and in detail the step-by-step procedure. These should be kept by the Office Manager, and from time to time be available for listing of changes in routine. This would also be a handy piece of information for the Management on the qualification for new personnel, and on the judging of salaries, and just how the work can be handled more efficiently. This could be a very good way of determining the need for additional personnel and just where extra work could be handled without additional burden to already over-burdened personnel. A new employee could read her duties and refer to them from time to time, be able to see her progress and go ahead to help herself to become one of us.

We should be made to feel a part of the "Oil Industry Family," not just "Office Personnel." We can do a far better job from the inside if we know what we are selling and doing and not just putting in time for a salary check.

3rd Prize:

KATHRYN CRAWFORD,
BERRY COAL CO., INC.,
GREENSBORO, N. C.

THE MARGIN OF PROFIT on oil being as low as it is, particularly for those dealers who do not have a large volume of oil business, requires a very close check on receipts, dispersals and cash involved on every gallon handled. As bookkeepers for a company which does a large volume of oil business, we would like to submit the procedure that we follow, hoping that it will help all dealers, even though most large companies have just as thorough a checking system in

this field. Also, believing in a fair deal for our customers too, our check on tickets might help. Our system is as follows:

All Tickets identified

1. Tickets are all numbered. When a driver takes out a group of tickets, he is responsible for each ticket, turning them back in numerical order as delivered. Wet or soiled tickets are marked "Void" and turned in to be recorded.

2. The gallonage on each driver's tickets is added, separating No. 1, No. 2, No. 3 oil, and a total made. This is recorded beside the numbered tickets turned in and total gallons delivered checked against master meter reading on truck, which reading driver is required to put down each morning, together with information as to how his truck is loaded initially for the day, No. 1, No. 2, No. 3 oil in the compartments on the truck. Small trucks with only one compartment will naturally have a load of either of the three grades. If the meter readings and gallonage do not agree, the tickets are checked to be sure that the driver has put down the correct gallonage delivered. Quite often we find that, especially when we are rushed with orders, the drivers will make errors in listing the correct amount, (for which they cannot be blamed too much when working under tense conditions). If it is in our favor, we make it a practice to immediately notify the customer and apologize for the error. After all, they have a copy of the metered ticket and can see the error. We've never had one yet to be other than considerate of the error. It's good business, because if they have a ticket for one amount and we send them a bill for extra gallonage without any explanation, it might leave a bad taste. The same applies to COD tickets. We re-check the gallonage and money extensions, and if an error has been made, either to the customer's or our advantage, they are contacted and the matter explained. We've been more than re-paid in "Good Will" for the time consumed by this contact, especially when the customer has been overcharged and we refund their money. On shortages, a little tactful explanation generally brings in the extra amount due us. When these errors occur, either in gallonage or money, charge or cash customers, we don't put off that contact until later, we do it immediately. This applies to amounts in gallons or money as your policy would call for. We do not contact about amounts smaller than a gallon or price of same. Extensions on charge tickets are made in the office. We then make tapes on COD and charge gallons and money. Total gallonage is checked against that delivered by all drivers for comparison. These tapes, along with our original tickets, are passed to the bookkeeping department for posting. Duplicate copies are kept in our department for posting to the visi-record. This is a record we keep on date, kind of oil, gallons delivered, and the driver's name.

3. Meter readings are recorded from the large storage tanks each morning, after all trucks have been loaded, and gallons of different grades of oil have been recorded in the drivers' meter record book, for example:

Truck No. 1	#1	#2	#3
Meter Reading	240	350	440
Meter Reading	440	240	350

Storage Tanks		#1	#2	#3	#4
Meter Reading	Date				
Meter Reading	"				

We then figure the amount of oil dispersed through the storage tanks against what the drivers have delivered and have on their trucks, plus gallonage sold to peddlers, and in this way we keep a fairly accurate check on oil dispersed and delivered. By doing this, and adding receipts of oil less dispersals, we also know approximately how many gallons are on hand each day.

We realize that possibly all this checking on gallons, tickets and money might seem superfluous to some, but we find that it doesn't take too much time and really pays off in the final analysis of profit and loss during the year on oil business.

Oilburner Serviceman

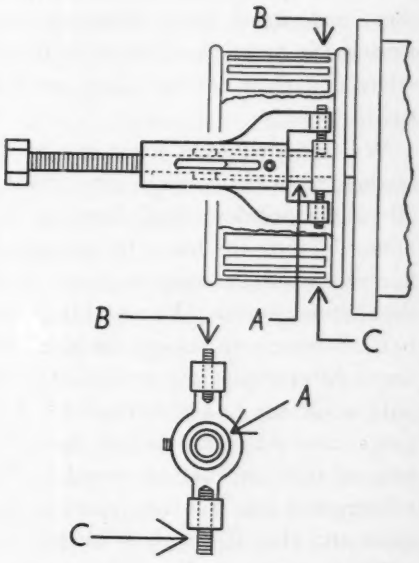
1st Prize: JOHN J. BYRNES, 79 WAYDELL ST., NEWARK 5, N. J.

I DESIGNED the hub-engaged blower-wheel puller to remove a stuck blower wheel from a motor shaft (U. S. Patent aplied for).

With the blower frozen on the shaft or jammed because of a burr made by an Allen screw, the point is to remove the blower without damaging it. This is especially difficult on a burner having no space between the blower and the end bell of the motor, into which a tool can be driven to wedge off the blower by applying force near the hub of the blower.

To use the tool shown in the drawing: (1) Remove from the blower hub the screw used to hold the blower on the motor shaft. (2) Push the sliding sleeve "A" against the hub. (3) Enter screw "B" into the tapping in the hub; of course, not far enough to secure the blower to the motor shaft. (4) Tighten the other screw "C" against the hub. (5) Remove the stuck blower by screwing in the large screw at the left side of the upper drawing.

The sliding sleeve is a good feature, for it keeps the tool from cocking sideways as pressure is put on the large screw.



The lower drawing is a head-on view of the puller, as it is seen from the motor or hub side of it.

The puller has several other features, but this covers the main principle of using it.

2nd Prize: W. "BOB" WEEKLY,
L. T. HARRIS CO., INC.,
LAWRENCE, KAN.

THE USE of a little wintergreen helps quite often to build new prestige for us among our customers. Last week we showed Mr. Jones how we used oil of wintergreen in tracking down his heating problem.

The Jones were dubious when we told them the smears on the wallpaper near the registers were due to a leaky furnace. The smelly fumes that sometimes came up the ducts were also a result of a leak somewhere in their heating plant. However, they had reason for their doubtfulness. Mr. Jones had had his furnace reset not so long ago and he felt that this work should have taken care of any leaks. But after we showed them how we had determined their trouble, they were confident that we were the people to correct the fault in their heating system.

First we made Mr. and Mrs. Jones familiar with the working principles of their furnace by showing them a cutaway drawing of a furnace as near like their's as possible. We pointed out the routes taken by cold air, warm air, and flue gases. After making certain that they understood these functions, we were ready to let them prove for themselves that their heating plant was not tight.

We stationed Mrs. Jones in a room farthest from the furnace, after closing all of the windows and doors in the house. Closing the house up prevented flue gases from entering the house from the chimney outside. We took Mr. Jones to the basement and closed the basement door. After explaining to him that his wife would not be able to smell any flue gases unless they came through the registers, we told him that we would let the wintergreen take the same route as the gases and that if any leak existed she would be sure to smell it. Taking a gelatin capsule from our tool kit, we filled it with oil of wintergreen from an eyedropper and tossed it into the flame of the burner. Our next step was to check with Mrs. Jones. Yes, she had smelled the wintergreen and it had definitely come from the registers. They agreed then that their furnace was faulty after seeing it with their own eyes.

Thus enlightening the Jones by taking only a few minutes of our time to let them prove for themselves their trouble, we made a new friend and a new customer. We did the repair work with their willing approval and their utmost confidence in our work.

3rd Prize:
WARREN T. HANNA,
7 ELM ST., NATICK, MASS.

HERE IS AN IDEA for men who frequently have to check oil rates. This usually is time-consuming and can be overcome by making the following device.

First, obtain a plastic toothbrush holder or other similar cylinder. Next, heat a common pin and burn small holes in the cylinder. Starting with the bottom, space the holes about one half inch apart right up to the top.

Now set up an oil line with the average rate of flow you will be concerned with. Let the oil spill into the cylinder. If the oil line output overfills the cylinder, space additional holes until by testing it this way the average oil flow fills up half of the tube. Now by further trial and error tests, the cylinder has become an accurate instrument with which timing and additional adjustments are unnecessary.

For wide ranges of oil flow, such as on rotary burners, it would be more accurate to have two tubes—one for up to 20 lbs. of oil per hour, the other from that point up to the maximum burner capacity.

Oil Truck Driver

1st Prize: EDWARD G. GRIMES, 316 MORTON AVE., RAHWAY, N. J.

THIS COVERS a triple-duty extension light for tank trucks. I believe this device should be used on all trucks likely to make night deliveries.

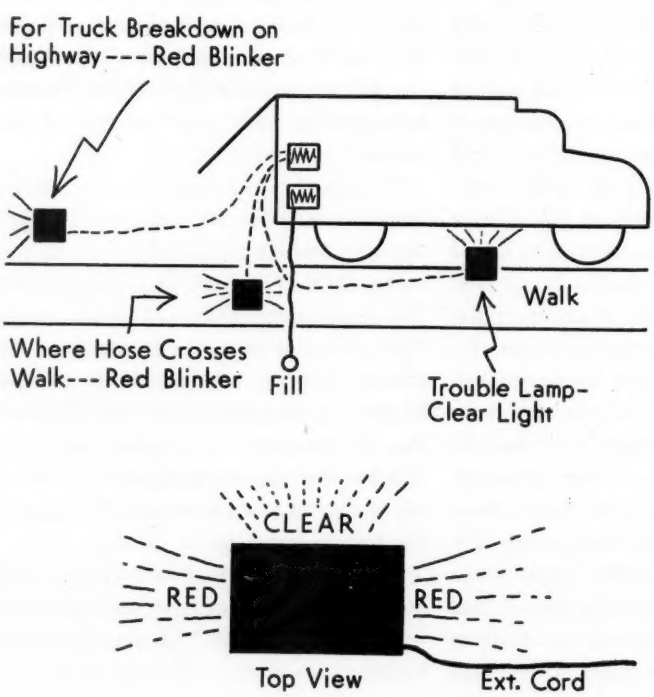
Use of this special light makes unnecessary lights having dry cells that go dead, cuts out buying new batteries, and eliminates the hazards caused by other lights getting lost.

First, this is a good rear warning light to use when a truck breaks down on a highway.

Second, it serves as a much-needed warning for use when a hose is stretched across a sidewalk at night; it eliminates the danger of pedestrians tripping over a hose they don't see.

Third, it's a good trouble lamp that can be used anywhere around a truck in trouble.

An important feature is that there's plenty of juice available from the big storage battery in a truck — loads and loads of juice compared to the feeble, limited amounts in the dry cells used in some lights.



The bottom part of the drawing shows how one side of this special light gives a big beam of white light, while from each end comes plenty of red light.

Readily available, inexpensive switches and flasher devices or special bulbs permit setting this trick lamp to

give steady light or warning flashing type light. The extension cord can be plugged into the truck electrical system easily at any of a number of places.

2nd Prize: GEORGE RUHL,
95 HARTLEY AVE.,
MT. VERNON, N. Y.

DURING THE LATE spring and summer months there are few oil deliveries. This is the time the driver should be given a steel brush and a can of medium grease.

Every cap should be given a thorough brushing to cleanse it and then a heavy application of grease should be applied to the threads and edges of cap. This can be done on the so-called last delivery of the season, when the driver is pumping oil, hence two jobs completed without loss of time.

You will be surprised the time and work this saves in the fall of the year. Most caps weld themselves with rust otherwise. If you have ever tried to take a rusted cap off, you will readily understand. This is also good before the winter season comes around. The caps will not freeze and you never have to build a small fire or pour hot water over them. The saving in time and patience is well worth the small effort.

3rd Prize (tie). BEN LOUD,
WOODBURY OIL CO.,
QUINCY, MASS.

A METER that will compute the gallonage and the price to tenths and print on the ticket the total readings of the meter. This will make a complete printing and eliminate the errors made by the driver in changing from gallons to price, usually done from a battered price card.

3rd Prize (tie): E. E. PRATT,
315 EAST FRANK ST.,
KALAMAZOO, MICH.

AN IDEA which would simplify and speed up the pricing of oil delivery tickets, and which would serve as an added service to oil customers, would be a type of oil meter for oil delivery trucks which could be set at current price for grade of oil delivered and would print, in addition to the number of gallons, the total cost of the delivery.

The notation, "Add tax, if taxable," could be printed in red at bottom of space designated for price.

Oilburner Salesman

1st Prize: LARRY MOODY, 95 WESTERN AVE., AUBURN, ME.

IN MY TRAVELS around I come in contact with many dealers. I would say that approximately seven out of ten are dealers who operate out of their homes or have a shop and office on their premises. In either case, additional rent and other operating expenses do not enter into their costs.

In most cases these men represent a name brand burner. Under abnormal and down to average times they manage to make a living and pay their few servicemen a fair working wage.

When business gets a little competitive these same dealers start talking to salesmen who call on them that business is "lousy" and that they can't see how their competitor down the street can put in a burner for $50.00 less than their price for a similar job.

Probably what a great many of these dealers may not realize is the fact that basically they are servicemen at heart and do nothing about the selling end of the business other than take an order when someone calls for a burner. A great many feel that selling is saying some trick word which they just can't find. Yet, strange as it may sound, they have a great many sales tools at their command that are so obvious and, therefore, overlooked. Sales are the life line of any business regardless of size, but, not knowing proper costs, they can make what looks like a great sales record turn into a lot of red ink.

Time and time again I am asked what the list price on an item is or what should the dealer sell an item for. This means one of two things. First, that he has no idea of operating costs and second, that he keeps no price records and figures that the list price is the proper consumer price.

Therefore, I propose that the Educational Department of the OHI institute a school for small dealers. Incidentally, when the fee is announced it should be charged to the dealer regardless of how many he may wish to attend. As a suggestion limit it to three. After all it is for the small business man and chances are that only he may attend or possibly bring along his son who is in the business with him.

The sessions should include:

Lesson I.

1. Psychology of using testing equipment such as CO_2 tester, draft gauge, and smoke tester.
2. Knowing how to figure heat losses.
3. Showing your prospects what you are doing and not trying to impress them with your knowledge.
4. Knowing ahead of time what the finance charges are on the proposed job, and for how long they can carry the charge. The customer still wants to know how much and what they will get for their money.
5. Point out to them what a good job consists of.

Lesson II.

1. What margin of profit means.
2. How the small man can beat the bigger outfits on costs.
3. Inventory turnover on necessary parts.
4. What lists prices really mean.
5. Items that small dealers should stock up on regardless of prices or markets.
6. Not overstocking to take advantage of a few cents in savings.
7. Collecting overdue accounts by better customer relations.

Lesson III.

1. Making good impressions.
2. Keeping service trucks clean, looking like a new car.
3. Taking dirt and debris with you. (Some localities have no rubbish removal.)
4. Getting across the point that attention to these small details are items of free advertising, with one neighbor telling another how clean you are on a dirty job.
5. The value of personal appearance such as shaving every day and also being uniform in dress.
6. Not bothering your customers with talk of materials going up and tanks hard to get, etc.
7. Spend more time telling your prospect how good your burner is

rather than tell him what your competitors' burner won't do. Recognize good competition.

8. If your product does not fit the application, say so.

Lesson IV.

1. Keeping pace with new ideas and new items.
2. Reading trade magazines and keeping notes on articles that may help him.
3. Knowing more and more about the products they use.

This is just a general idea but, I believe it is what these smaller oilburner dealers are looking for.

2nd Prize: R. C. HANNON, GENERAL DELIVERY, ENGLEWOOD, COLO.

FUELOIL and oilheat dealers have for many years shied away from extensive usage of radio as an advertising medium, first, because of its relative expense and secondly, because of the difficulties inherent in checking the efficiency of any given series of radio offerings. However, during recent months, dealers have developed a number of radiocasts which are well worth mentioning in candid capsule or digest format, for the sake of easier reading.

One dealer, for example, presents "Housing Newscast," a program heard from 6:55 through 7:00 p.m. on Tuesday, Thursday and Saturday. Anyone, real estate agency or individual, with a house to rent, sell or lease, may write out a brief description of it and mail or bring it in to the retailer for inclusion on a forthcoming program. By the same token, any individual in urgent need of a roof over head may prepare a brief statement of his housing needs for presentation on a program. No charges are made for either announcement.

Real estate agencies are urged to have representatives capsule their real estate offerings for presentation and the net result is that many such agencies pass on to the dealer lists of individuals who have just bought homes and who might be good prospects for oilheating installations. Moreover, individuals who locate a home through this program or sell a home and move to another, are very often, interested in oilheat in the future. Net result, a radio program that produces for its sponsor.

Another dealer has a program especially for the ladies. Since surveys reveal that it is the little woman who selects oilheating equipment, and, since these surveys also disclose that virtually every woman is interested in sports, this merchant presents "Sportswoman" every Wednesday and Friday from 6:25 to 6:30 p.m.

On this program newsnotes of feminine sports predominate. Any organization sponsoring skiing, baseball, basketball or other sporting activities, leaves news bulletins at the retailer's or mails them. Bowling, skating, any sports with feminine league interest, make up the backbone of the program. On each program one woman is interviewed who is active in sports and she receives a cash payment for the brief interview. Any woman may send in a postcard with her name, address and favorite sport. From these are selected women who seem to have something "on the ball" insofar as sporting blood is concerned. Theme of the twice weekly program is "With oilheat in the home you have much more leisure time for participation in sports."

On the other hand, one fueloil and oilheating dealer has a radio spot which is truly on the unusual side. Each Monday morning from 7:55 to 8:00 a.m., he offers "Weatherman Speaking." This is a day by day weather forecast for all the remaining days of the week. Many housewives like to plan ahead, for picnics for the small fry, activities for women's groups in the neighborhood, shopping and other daily activities. Weather indications are secured from local weather bureau sources which make the program about as accurate as human nature will allow. Commercial context of this program points out that weather conditions change from day to day but with oilheat, the house can be kept as warm as toast.

This same dealer has another program which he has found most successful. This is entitled "Happy Birthday, Dear" and is heard on Monday, Wednesday and Fridays from 7:55 to 8:00 a.m. During this five minute interval husbands may concoct ten word personalized messages congratulating the little woman on an approaching birthday. These messages must be left on the premises personally but no purchase need be made.

The same dealer also presents "Happy Anniversary Dear," a companion program on Tuesday, Thursday and Saturday, at the same time. Husbands submit ten word messages on anniversaries. These messages, either in the birthday or anniversary category, please women immensely and husbands often are susceptible to the sales clerk's reminder that "no finer gift exists for a birthday or anniversary present for any woman than an oilheating installation." These programs are inexpensive since an announcer reads the messages. They are short and the station time charge is not unduly high.

It may be observed that the majority of the radio presentations reviewed are of the "audience participation" species. This makes for highly personalized offerings.

It may also be observed that radio advertising cannot sell itself without a little encouragement in the way of calling attention to radio programs being offered. One dealer offers weekly, two $1 prizes for the best letters or postcards praising or "panning" his radio

(*Please turn to page* 142)

"It smacks of economy -- giving me 300 stamps to lick, then asking me to lunch!"

Wall Flame Rotary Oilburners

Conclusion: Fire testing the installed Burner; Common service Problems

by
D. L. Wooden†
and
P. C.. Coale*

THE previous installment stressed strongly the necessity of the care that should be exercised when installing the wall flame rotary burner. The purpose of this installment is to bring forth the absolute necessity of thoroughly fire testing the burner after the installation and also to aid the service man in becoming familiar with certain possible service problems and their remedies.

After the installation has been completed up to the point of wiring the igniters the following is the proper procedure.

Assuming the hearth is still wet and the owner is in need of heat, do not attempt to hook up the high tension leads from the transformer to the igniters. Quite a number of good installations have developed air leaks at the igniter due to this. While the hearth is wet, the igniters cannot be tampered with as they will always move just enough to cause an air leak. As previously explained an air leak will cause the flame to become long at this point and cause carbon to form at the igniter and eventually cause a failure as the igniter will short out. Therefore under these conditions place a swathe of newspaper in the flame ring and ignite the oil by means of the burning paper. However, before lighting the paper the following steps should be taken.

1. Be sure that all dampers are removed or locked in open position and the automatic draft regulator is free to swing.
2. Open the gate valve at the oil storage tank or wall pump. Close the oil regulating valve in the magnetic oil valve assembly and then open two or three turns.
3. Spin the burner head to determine that it is free and set the combustion air adjustment to approximately ½ open.
4. Leave the fire door open in the boiler or furnace.
5. Set thermostat at the highest temperature to insure the closing of the circuit but first be sure the line switch at the burner is "open" or "off."
6. Throw line switch to "on" position and observe burner for flow of oil from the distributor tubes to the flame ring. When oil flow is observed turn burner "off." Before oil flows the first time the stack control may lock-out on safety due to the fact the fuel system has not vented itself free of air. By opening the metering valve a few more turns the air venting process may be hastened.
7. Turn the metering valve back to original position if opened for venting purposes.
8. Light paper in flame ring and start burner. DO NOT CLOSE THE FIRE DOOR. The oil should then ignite. If it does not ignite it may be necessary to increase the amount of oil flowing or decrease the amount of air or both. After the oil has ignited close the fire door partially but not all the way as the flame is likely to snuff out. The flame should be all yellow and burning in the flame ring. If after a few minutes operation the flame begins to lift out of the flame ring open the air gate or decrease the oil flow to keep the flame in the ring. A small flame is advisable during this operation.
9. The burner should operate in this manner for approximately one half hour. By this time the hearth material will have hardened sufficiently to enable you to connect the high tension leads from the transformer to the igniters. It is not advisable to operate the burner any longer or with a large flame as too rapid drying may shrink and crack the hearth.

Check the fuel rate. For satisfactory and efficient operation the rate should be measured. This can be accomplished by disconnecting the oil line on the discharge side of the magnetic oil valve and extending a tube upward to the height of the burner fuel tube or reservoir, depending on the make of the burner. Then bend the end back in a gooseneck fashion (see Fig. 1). Turn the burner on and time the flow into a graduated container. Adjust the flow to the required firing rate for the boiler or furnace in which the burner is installed.

Place the grilles or flameflex at the manufacturer's specified position on the flame segments except for possibly two or three pieces. At the points where the flameflex are left out place small cardboard targets as shown in Figure #2.

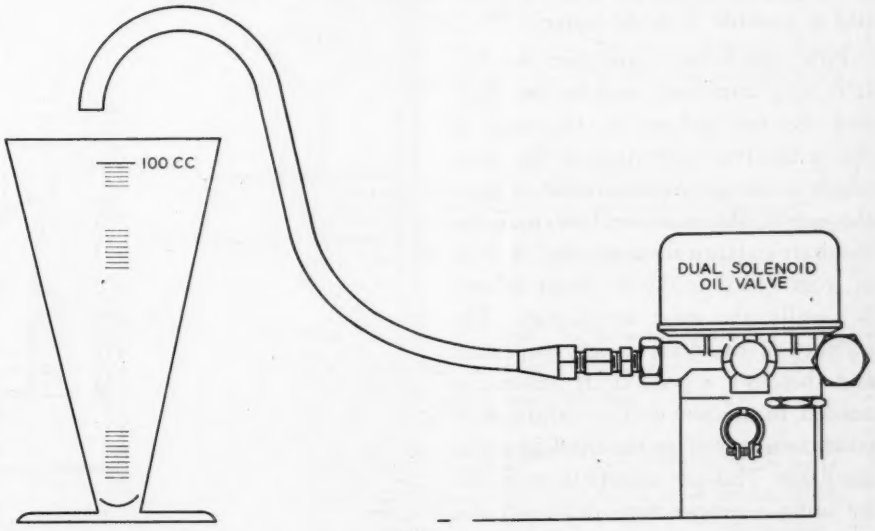
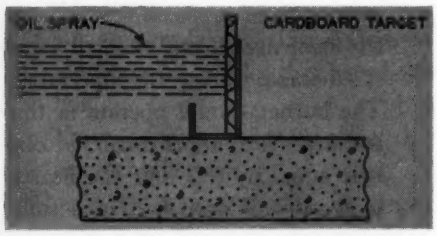


Fig. 1

†Laboratory manager and
*Field Engineer, Fluid Heat Div., Anchor Post Products, Inc.

It is recommended that the targets be placed on the flame segment adjacent to the igniter because it is doubly important that the spray be accurately placed at that point inasmuch as it affects ignition as well as fire characteristics. In large hearths it is recommended that a



spray test be made at more than one point because of the chance of greater variation in larger hearths. The purpose of these targets is to check the oil strike. Be sure the ignition is off before checking the strike and also be sure the hearth is not hot.

Oil Strike, Fire and Draft

Restart the burner just long enough to get a spray pattern of oil on the targets and then compare the location of the strike with the manufacturer's specifications. If the strike is wrong, adjust the burner properly to bring it within correct limits. DO NOT ADJUST THE BURNER FOR PROPER OIL STRIKE UNTIL THE HEARTH HAS PROPERLY DRIED. After making the necessary adjustment install the remaining grilles.

Start the burner for the purpose of setting the fire and the draft. The final setting of the fire should not be done until the hearth is entirely dry. The equipment needed to set a fire properly is a good draft gauge, CO_2 analyzer and if possible a smoke tester.

First, check the draft over the fire. It is very important to take the draft over the fire and not in the stack as this is the true indication of the draft which is aiding the transmission of gases through the flue passes and also indicates the draft stability above the fire. A draft of from 0.025″ to 0.035″ water column is usually the most satisfactory. The stability of the draft is very important and therefore a good draft adjuster is needed. Insufficient draft or erratic draft conditions may cause the snuffing out of the flame. This can usually be overcome by using a proper type draft adjuster or by removing all 90 degree elbows in the smoke pipe run and substituting two 45 degree elbows for each in order to reduce friction loss and pressure drop.

When setting the fire a typical flame is one in which a lifted fire (fire out of oil ring) extends from:

1. Top of flame segments to approximately midway up the boiler walls on Fluid Heat installations. See Figure 3 (c).
2. Top of grilles on Toridheet (Fig. 3 (a)) and Timken installations (Fig 3 (b)).

A typical flame obtained when burning No. 2 thermally cracked fueloil has a blue base, with slight streaks of yellow flame running through the blue base. The flame then shades off to a white or pale yellow with topmost tips a dark red. A typical flame obtained with catalytically cracked No. 2 fueloil has a blue base, but with considerably more yellow running through it than the thermally cracked fuel. The flame shades off into a deep yellow with red tips and extends a little farther up the boiler walls. See Figure 3.

To observe the flame pattern and appearance it is only necessary to quickly snap the fire door open. An immediate observation will have to be made as the excess air drawn in through the door opening causes the flame to become all yellow and drop down into the oil ring.

After setting the fire to what appears to be a typical flame as previously described it is strongly advised to make an analysis of the products of combustion in order to determine the CO_2 content. This reading should be taken over the fire if possible as a more accurate analysis will be obtained due to the fact there is a possibility of some air leakage into the combustion passes through the furnace or boiler sections. This leakage would dilute the CO_2 content of the gases thus indicating a lower CO_2 than actually produced. The fire should be adjusted to produce from 12 to 12½ per cent CO_2. Higher CO_2 percentages may be obtained without the slightest difficulty, but it is felt the above setting is safer as above this point instability of flame retention is rapidly approached.

The air adjustment should be made with exactness because it affects sound, operation, economy, cleanliness of hearth, boiler or furnace, and fire stability. A deficiency of air will tend to make the fire float away from its point of flame retention and will make the fire more blue and dilated than usual. An excess of air will cause the flame to burn in the oil ring entirely or intermittently flash into the ring. This makes the fire harsh, noisy and the tips of the flame very smoky.

A final step to take is a smoke test. There are several smoke testers on the

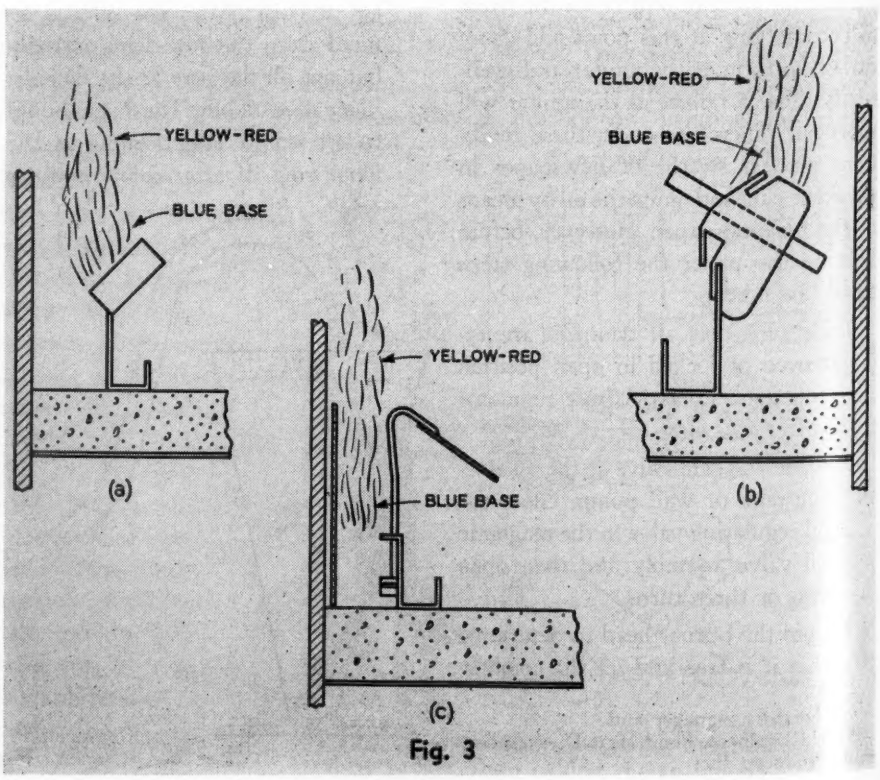


Fig. 3

market within a reasonable price range which will serve this purpose satisfactorily.

A properly adjusted burner and fire will not show the slightest indication of smoke. Smoky combustion with a wall flame rotary burner can usually be attributed to a ring fire. At times when taking a smoke test a slight yellow stain will appear on the filtering member. This does not indicate faulty operation or adjustment of the burner.

Service Problems

Some of the service problems encountered with the wall flame rotary burner will now be discussed.

1. Speed of ignition can be affected by several things.
   a. The flash point of the oil used may be too high. The flash point of an average grade of No. 2 fuel-oil should not exceed 150° F. in accordance with Commercial Standards Specifications.
   b. A large fire ignites more readily than a small fire. Therefore, in small boilers particularly do not adjust too small a fire. Also, a rich or soft fire, by which is meant a fire with minimum air proportions, ignites more quickly than a harsh fire. A fire set to a percentage of CO_2 expressed previously of 12½ per cent can be considered an average fire, that is not too rich and not too harsh.
   c. The oil strike could be much too high and should be lowered to the specified position.
   d. The spark gap may be partially carboned and thus reducing the intensity of the spark. This is an indication that the oil strike may be too low thus causing the main body of the spray to impinge the spark gap. Also, the transformer and igniter connections may not be tight thus setting up a high resistance circuit and reducing the spark intensity.
2. Carbonization of the electrodes may be caused by a low oil strike as previously mentioned, by an oil with too high a fixed carbon content, or by a deficient draft intensity which causes recirculation of burned gases and consequently a

Troubles and Remedies

Trouble	*Probable Cause*	*Remedy*
1. Burner does not operate	(a) Fuse blown	(a) Locate reason for overload. Correct. Replace fuse
	(b) Motor burned out	(b) Replace motor
	(c) Defective stack control	(c) Replace control
	(d) Stack control out on safety	(d) Determine reason for safety shutdown. Correct. Reset switch
	(e) Bad electrical connections	(e) Locate and tighten connections
	(f) Condenser bad	(f) Replace condenser
	(g) Thermostat set too low	(g) Set thermostat to desired temperature
2. Ignition Failure	(a) Defective transformer	(a) Replace
	(b) High tension leads not attached to transformer terminal or to electrodes	(b) Check. Attach leads
	(c) Fuel line clogged	(c) Check. Remove stoppage
	(d) Defective stack control	(d) Replace
	(e) Air gap between electrode and oil striking face of flame segment incorrect	(e) Check spacing. Correct in accordance with specifications
	(f) Improper oil. Burner approved for Nos. 1 & 2 oils	(f) Have sample and change oil if necessary
	(g) Oil strike too high	(g) Check oil strike according to method explained
3. No Oil	(a) Storage tank empty	(a) Replenish fuel supply
	(b) Magnetic valves inoperative due to: 1. Loose electrical connections 2. Burned out oil	(b) 1. Tighten connections 2. Replace valves
	(c) Restriction in fuel line	(c) Locate restriction and remove
	(d) Not enough fuel head pressure	(d) Change constant level valve or tank to give proper head pressure
4. Motor Fails to Operate	(a) Loose electrical connections	(a) Tighten connections
	(b) Defective motor	(b) Replace motor
	(c) Condenser defective	(c) Replace condenser
	(d) Shaft seized in bearings	(d) Replace motor
	(e) Defective primary control or limit control	(e) Check all controls for continuity of circuit
5. Smoky Combustion	(a) Improper air adjustment	(a) Adjust properly, as explained
	(b) Fuel rate too low from restriction in fuel line or clogged strainer resulting in ring fire	(b) Check for restrictions. Remove. Reset fire
	(c) Bad air leak through hearth behind flame ring	(c) Check for leaks around hearth with plumber's candle. Seal if possible
	(d) Draft too high due to: 1. No draft regulator in stack 2. Setting of draft regulator improper	(d) 1. Install proper size draft regulator 2. Set draft in accordance with instructions
	(e) Too low an oil strike causing a ring fire	(e) Check oil strike. Reset according to instructions
6. Excessive Fuel Consumption	(a) Fuel rate too low due to: 1. Clogged oil line 2. Improper setting of metering valve	(a) 1. Locate restriction. Remove 2. Check fuel rate
	(b) Improper air adjustment	(b) Reset fire according to instructions
	(c) No draft regulator installed	(c) Install a regulator and adjust draft
7. Pulsating Flame	(a) Draft too low	(a) Check draft
	(b) No draft regulator in stack	(b) Install draft regulator
	(c) Burner installed improperly	(c) See installation instructions
	(d) Restriction in chimney or flue passes	(d) Check for restriction. Remove
	(e) Excessive fuel rate	(e) Check fuel rate
8. Radio Interference	(a) Weak relay coil or primary control	(a) Replace control
	(b) Dirt between relay armature and magnet core	(b) Clean
	(c) Dirty contacts on primary control thus causing insufficient contact	(c) Clean
	(d) Direct radiation from high voltage leads of transformer	(d) Shield exposed portion of lead with Belden braid, or equivalent
	(e) Transfer back through transformer primary line and into radio receiver	(e) See text under subhead, "Eliminating Radio Interference"

(*on next page*)

lower fire temperature thus contributing to this condition. The main thing, however, which causes carbonization with the "cat" oils today is disregarding the use of the wall band in the installation. The purpose and function of the wall band was explained previously. Without it carbon will form quickly as the temperature of the oil striking face is not maintained at a high enough temperature.

3. Fire pulsation is encountered at times in some types of boilers and furnaces.
   a. If the flue passes are not unduly restricted or tortuous, fire pulsation can usually be attributed to carrying too large a fire. Reduction of the fire size will usually overcome the condition. However, in warm air furnaces due to restricted flue passes and abrupt changes in directions of the flue gases it is sometimes necessary to remove or open the bypass damper and at the same time reduce the size of the flame slightly below the maximum firing capacity of the unit.
   b. Erratic draft conditions caused by an improper or faulty draft adjuster can also cause a pulsating flame.

Smoke and oil Odor

4. Smoke and oil odor may be created by a few unfavorable conditions.
   a. From ignition on a cold hearth it is normal for a very slight gray haze to emit from the chimney for 5 to 10 seconds. An excess air adjustment will increase this slightly. No odor at the boiler or furnace should result from this condition, however. Ignition on a hot hearth should not produce any vapors or haze. During normal burner firing the chimney should be entirely clear, otherwise the fire is not adjusted properly. A normally adjusted fire should lift out of the ring on a cold start in approximately 45 seconds to one minute and completely stabilize within one and one-half minutes. If after lifting there is excessive floating of the fire during the stabilization period or this period is prolonged the oil is too heavy, the oil rate too high, air volume too small, or the draft intensity is insufficient. Odors will be emitted around the fire door or any other openings or cracks adjacent to the firing area under these conditions.
   b. Smoke or vapors after shut-down may be caused by too low an oil strike or too high an oil strike, the latter probably being the more prevalent cause. Overshooting of the main body of the oil spray will cause "after fire" behind the ring resulting in smoke and offensive odor.

Eliminating radio Interference

Radio interference caused by the ignition system may be eliminated through one or several of the following steps:

1. Make sure the high tension leads are tightly connected at the transformer and at the ignition electrodes.
2. Make sure the transformer case, burner, and furnace are well grounded. Ground wire should be kept as short as possible.
3. Make sure the neutral wire of the house supply line is well grounded.
4. Ground the radio chassis.
5. Clean the igniter porcelains and make sure they are free of dust and carbon.
6. Connect two (2) two (2) microfarad condensers across the low voltage line into the transformer, grounding the midpoint. Also connect a 25,000 ohm (plus or minus 20%) resistor across the low voltage line at the transformer.
7. In an especially obstinate case connect a combination of radio frequency choke coils in series with the low voltage line of the transformer.
8. Make sure the condenser leads are as short as possible and of the same length.
9. Ground the condenser case.

These service problems probably are the most prevalent in wall flame rotary service history, but there are a number of other possible situations which may occur. These are presented, in a condensed yet understandable form, in the accompanying table. Some of the possible service problems might be considered elementary, yet these causes for improper operation present themselves every day. It seems that the simplest faults sometimes are the most difficult to find and correct.

Lincoln Tech announces Five trade extension Courses

BEGINNING with sessions on October 2, Lincoln Technical Institute, Newark 2, N. J., instituted five individual Trade Extension Courses. They have been designed to supplement on-the-job training of servicemen and salesmen with technical background instruction. Each course is conducted for five hours, from 6 to 11 P.M., each Friday night for twenty weeks. Cost of each is $94.50, payable in weekly installments of $5.00.

The entire set of courses is aimed at increasing effective service to customers and to provide accurate information on wiring, basic electricity, automatic controls, code requirements, heating surveys, combustion principles and related subjects. Each course is tailored to fit a particular need. Courses offered are, Electricity in oilburning equipment; controls in domestic oilburning equipment; maintenance of heavy oil—industrial equipment; principles of domestic heating; selling oil heat equipment. The latter includes studies on figuring heat losses, principles of oilheating, discussions of warm air, steam and hot water heating systems, how to calculate costs, sales demonstrations and methods.

Max W. Knight, formerly regional manager for the entire northeastern sales territory for Coleman Co., Wichita, Kan., now represents the company in New York and western Connecticut and *Hascal Simmons,* former sales engineer under Mr. Knight, becomes manager for Maine, New Hampshire, Rhode Island, eastern Connecticut, Massachusetts, Vermont and Long Island. The division of the territory was made to permit closer association with distributors. Mr. Knight, who joined Coleman four years ago, lives in Hartford, Conn.; Mr. Simmons, with the company since the end of World War II, will make his headquarters in Springfield, Mass.

Fueloil stimulates the gasoline Jobber

How one Marketer grew with Fueloil to afford a water Terminal

by
Robert Gray

THE DAY OF THE visit to Plattsburg, N. Y., September 1, was the 25th anniversary of Bert Copeland's becoming an oil man. It was not the anniversary of the Copeland Oil Co. which he heads, for that only goes back to 1939. The 25 years ago date was when he went to work for Sun Oil Co. as a field salesman in western New York. He is still with Sun, sells Sun products now that he has his own business.

The oilheating industry is just about old enough for a lot of its principal men to have been officers in the first World War. If they lived in the East, the chances are they went to the officers' training camp at Plattsburg. They about froze in open air training. The same elements make the present Plattsburg a very good fueloil market.

Last winter there were 8,550 degree-days and 60% of the homes in town use oil heat.

To add further interest, this is a frozen-in area, so called. Keeping oil prices reasonable, water transportation is used. Barges holding 12,000 barrels and drawing 12 feet of water bring the oil 330 miles inland from New York Harbor . . . up the Hudson to well above Albany, then through a branch of the state barge canal system into the south end of Lake Champlain and 90 miles more up the lake's west shore to Plattsburg.

The cost of this movement is less than a cent a gallon, actually 38¢ a barrel for No. 2 fueloil and 40¢ for No. 5. By December 1 the barges must stop, for there's ice in the canal and it will be the first of May before everything is clear again.

To understand the interesting development of Copeland's business, you first should look at his territory. He has Clinton and Essex Counties for Sun Oil products. The total population of the two counties is only 88,000 for 10 months of the year. During July and August this is swelled by hordes of vacationists from the cities, for the area is the heart of the Adirondacks, and includes such notable spots as Lake Placid.

Taking over the business of an earlier Sun jobber, a business small in volume, Copeland started in 1939 to build for himself. Major oil company training is useful to a man in a situation like this. He has had a lot of experience in sizing up a market, in knowing why some jobbers fail to make it go, in understanding how price structures are put together.

For one thing he early decided to concentrate much of his time on getting the permanent business of the region instead of emphasizing the summer season influx. Resort trade is temperamental. This summer for example it was disappointing, for too many of the days were cool or rainy. Folks would come in for a stay and pull out after a few days to do their freezing at home. Another summer may be hot and dry in the cities, the mountains crowded to the last white birch. It's an unpredictable venture.

In the 11 years Copeland has built his gasoline volume to 3½ million gallons from little more than a standing start. Most of it is well rooted business, neighborly business with year-round folks.

But there were still problems. The people that live there all year don't drive in the winter much more than they have to. So even though he took only a secondary interest in the vacation trade, Copeland still found his summer sales averaging more than double his winter. During the past year, for example, July accounted for 11.9% of annual gasoline sales, August 11.8%, while January was 5.5% and February 5.8%.

Trucks were idle a good part of the year. Employees of the right kind were hard to hold, some of them. The answer was unmistakably fueloil.

Copeland inherited a little fueloil business when he bought out the former jobber . . . about 100,000 gallons annually. But gasoline was the prize, and when the war overtook him two years later he was still working at gasoline almost 24 hours a day.

Like many an oil marketer the war caused him to stop and look. Not much expansion was possible, what with rationing and the supply and distribution committees trying to keep everybody about where they were.

When he recognized that it was fueloil business he wanted there was little he could do about it until the war ended, other than prepare. Copeland's face became a familiar sight at industry meetings during the years of the war. As he met fueloil and oilheating men he asked a lot of questions.

There was some fueloil business around Plattsburg, but taking it away from the companies that had it looked like the hard way to get started. So when the Japs quit Copeland went after oil-

Bert Copeland, *seated, looks over* **Bill Field's** *oilburner sales campaign chart. Field has sold oilburners in Plattsburg for 18 years.*

burners with not too much success at first in getting any. Then he took an issue of FUELOIL & OIL HEAT and wrote to every burner advertiser. Most would be glad to have his business a little later, but Delco wanted it then and would give him some burners to get started.

In the five years from that August to this one the company has sold over 700 domestic oilburners. Today there are other brands sold, Iron Fireman and Oil-O-Matic to have a variety of types, but the bulk of sales are still Delco equipment and it's a Delco electric sign on the front of the building.

Starting cold in oilheating, one of Copeland's smart moves was to bring in Bill Field to head the department. He had been selling G-E burners in Plattsburg for 15 years and he has personally sold nearly all of the 700 installations in five years for Copeland.

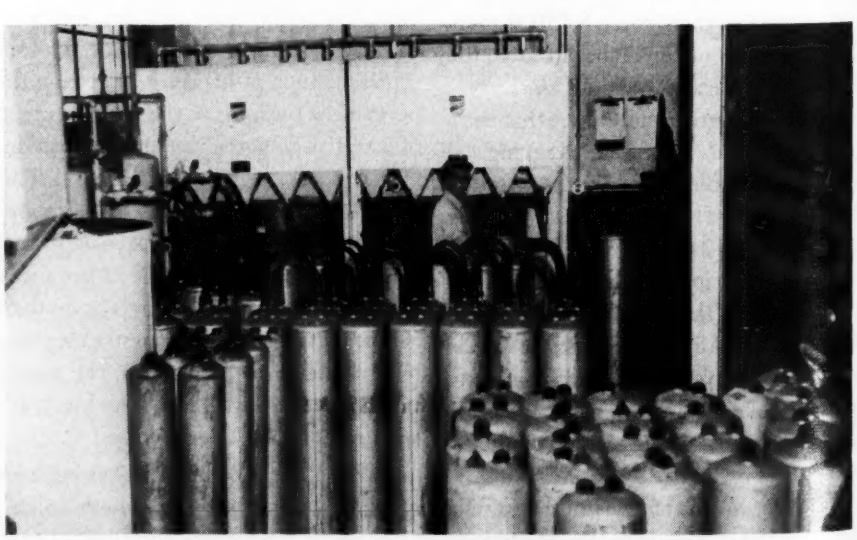
Service better than Plattsburg folks were used to was an early move. 1946 saw the start of 24 hour, 7 day service, the first in town. Another first for Copeland was automatic fueloil deliveries with degree-day methods.

As the burner department developed, Field began to wonder why stores and other larger buildings couldn't be heated with oil as well as homes. In 1945 there was no installation in town firing more than 3 Gph. He sold a nine gallon job, then some larger ones and on up to one job firing 28 Gph with a single gun burner on No. 2 oil, a Silent Glow burner.

Then the fun started. This whole oilheating department was designed not alone to give Plattsburg families and merchants nicer living, but basically to build an off-peak oil business. The majors started picking off some of Copeland's larger customers at his cost. In other words if the stores would put in tanks as large as 6,000 gallons so they could take a full transport drop, 4,000 gallons, they could buy at the tankcar price. That is the way he was buying.

A man not schooled in major company thinking might have blown his top over this, but instead Copeland looked for the bug under the chip. It was water transportation. Four majors have water terminals in the 118 miles of Champlain's west shore. That put them at a different notch in the pricing structure. Instead of using a tankcar base and allowing the water saving to be an extra profit, they were using a New York Harbor base, plus the water hauling cost for a selling price.

Copeland got his own water terminal. The mechanics of getting it are not too important. Sun first helped on an amortizing deal for a million gallon gasoline and one and a half million fueloil storage tanks. Later he bought adjoining acreage and built on his own resources another million and a half gallon fueloil tank, this time for No. 5 oil, of which more later. In any event, he is now able to match anything the majors might be inclined to do on prices. When he sells a big burner he can keep the oil business.



Water softener *business as a sideline is also a postwar venture. Tanks are brought in and serviced after 3,000 gallons of use.*

The company now has two million gallons of fueloil volume to balance its three and a half million gasoline. It has year-round balance. Deliveries run between 400,000 and 500,000 gallons a month summer or winter. Three trucks are dual-purpose, switch from one product to the other. A fourth is a new 4,600 gallon Autocar transport used the year round for gasoline, only occasionally for full transport drops of fueloil.

It was just a year ago this summer that Copeland decided to try for some heavy oil business. Nothing was being sold in the region heavier than No. 2. His first step was to get a franchise for Ray oilburners. Then Bill Field sold some.

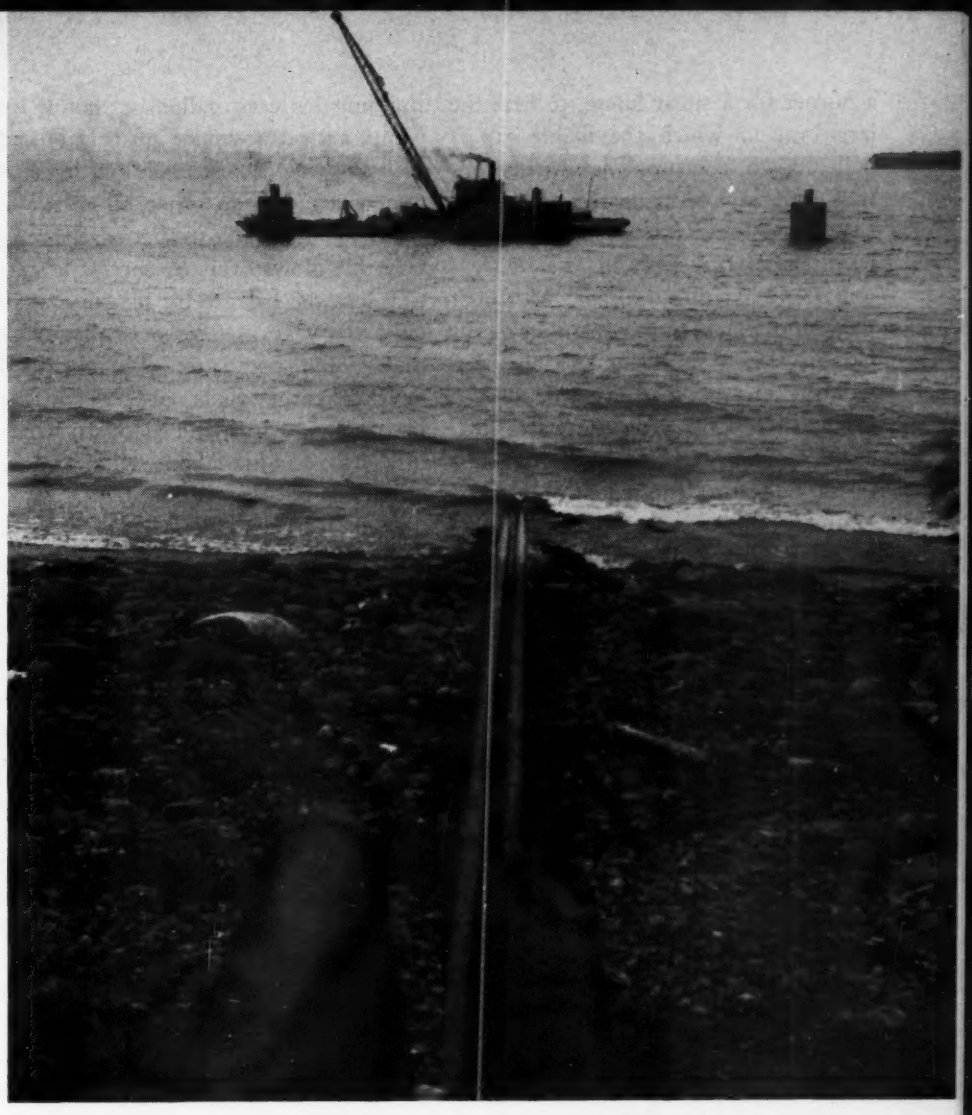
It was a risk venture. If he could be sure of around a million gallons a year of No. 5 oil business he could afford to build the necessary terminal storage.

If We Get the Oil

The first Ray burners were sold on a contingent basis . . . assuming the company could get a source of supply. Copeland was able to arrange with another independent marketer across the lake in Burlington, Vermont, to get some No. 5. It had to be hauled 75 miles around the end of the lake and it cost the customers a cent premium, but even on that basis the burners were sold.

The first was to the Doctors Hospital in Plattsburg, an eight story building needing 150,000 gallons a year. In the first full year ten jobs were sold by Field and the No. 5 gallonage built to 700,000. Last spring the new terminal tank was started, and the first deliveries from it were made on August 31. Copeland has ambitious plans for making the terminal still larger, soon he hopes.

The No. 5 oil customer now pays 9.25¢ at the terminal in transport lots, and in addition pays the commercial trucker for hauling it. A big customer for No. 2 oil, like a store or apartment, pays 10.4 in transport lots at the terminal, plus commercial hauling charge. A fueloil "peddler," as they call them, a man who sells at retail but picks up at some other company's storage, pays about 10.3¢. The retail price for No. 2 in Plattsburg is currently 12.9¢, so there's a 2.6¢ margin without a terminal. A water terminal owner has at present around 1.5 more, less his physical operating cost.



Offshore dock *of Lake Champlain barge terminal, to get dependable 12 ft. depth. One line is Copeland's, the other Shell's.*

Up in that cold country a terminal operator needs a lot more margin than one farther south. All of the winter's supply must be stored. Copeland believes that the best that can be done on fueloil is a 1½ time turnover of storage capacity in a year; on gasoline the best is about 3½ times.

The retail margin is reduced if the customer has a large tank. Copeland has established a policy in Plattsburg of allowing the customer a 3/10¢ discount if he has storage above 300 gallons and 5/10¢ if his home storage is above 600 gallons . . . in other words, larger than the common 275 or 550 gallon tanks.

In building the Copeland fueloil business, most of it came from coal. Any fueloil is cheaper than hand-fired anthracite at the present price of $23.75 a ton. Stoker buckwheat is $18.00 and rice size is $15.00. Industrial soft coal at $10.69 is harder to overcome.

In selling domestic oilburners the company has tried most of the common practices, a few special ones. There could be no big builder developments in a town of that size, but Field sold one lot of 35 houses. He also sold in one order 37 burners for as many buildings at Champlain College.

Champlain College occupies 198 buildings of what was the old military post. Every building has a separate No. 2 oilburner. Last season Copeland had the oil business for the college, but must bid for it again this coming season, as the college is a part of New York State University.

Last spring when burner sales were slow the company advertised a special off-season price of $289 for a gun burner installation including 250 gallons of fueloil. The first week it brought 24 sales. The offer ran for a month but was not again advertised.

Among interesting special applications for oilheating, last year Field sold

a burner for a sugar house, to heat the large vat in which the maple sap is boiled down to syrup. The owner is enthusiastic, says it made the best syrup he ever had and faster. He credits the even temperature with oil.

Bert Copeland's brother, Mortimer Copeland, joined the company in recent months as vice-president and has been working on the specialty side of the business. He looks after the water softener department and is becoming active in the oilheating equipment picture. A graduate attorney, he spent six years with the F.B.I. and then two years with Sinclair's affiliate in Caracas, Venezuela, before settling in Plattsburg.

Bert Copeland has become a fueloil enthusiast, also an oilburner enthusiast. Building his own gallonage month by month appeals to him a great deal more than slugging it out to take existing customers away from other oil men, although he is capable of that too if necessary. He glows over the success in getting seasonal balance for his business in only five years . . . in a small city at that, 19,000 population. The No. 5 oil development, a whole new concept that no competitor had, and successful within a year, has him about willing to try anything if it's in fueloil.

Mild mannered yet alert, Copeland faces problems fast and rides with his decisions. If outside financing is needed his confidence seems to get it. With an air of not having arrived, but rather going some place, he's a stimulating person.

Planning under way For warm air Convention

THE 37TH ANNUAL CONVENTION of the National Warm Air Heating and Air Conditioning, Cleveland 14, Ohio, is to be held in St. Louis, Mo., at the Hotel Statler on December 5 and 6. Reports from the Association's Program and Entertainment Committee indicate that plans are well under way to make this gathering one of the best.

Clarence S. Franke, American Furnace Co. and president of the Association, will call the convention to order on December 5, make his opening address and introduce the speakers. Tyler S. Rogers, assistant to the executive vice-president, Owens-Corning Fiberglas Corp., will report on "Insulation as a Function of Heating and Air Conditioning." He is to be followed on the program by John T. Anderson, manager of the Commercial Research Dept., Armco Steel Corp., who will cover the subject, "Building Forecasts for 1951."

The noon luncheon on December 5 will feature Dr. Arthur H. Compton, Chancellor, Washington University, St. Louis, who will discuss the "Contrast of East and West." Dr. Compton, well known throughout scientific circles as a top physicist, is a forceful speaker and has won a Nobel prize for his discoveries about X-rays. He worked on the "Manhattan Project," designing the atomic bomb.

The afternoon session on December 5 will open with a report from R. C. Hienton, general sales manager, Cleveland Electric Illuminating Co., and Robert V. Main, manager, Electric Home Bureau on the Illuminating Company's heating sales promotion program. Mr. Hienton will explain why the company became interested in the promotion of heating equipment; Mr. Main will follow with a talk on the "Winter Air Conditioning Sales Promotional Program." The program has been under way during the past year and has aided local dealers to boost sales of winter air conditioning. The Illuminating Company devised the slogan, "Get more than heat alone! Enjoy comfort, cleanliness, and economy. Install winter air conditioning," as a central theme for the program.

Also to be heard during this session will be M. I. Levy, Viking Air Conditioning Corp. and chairman of the Publicity and Merchandising Committee, who will tell of accomplishments during 1950 and objectives for the 1951 publicity campaign.

A panel discussion of dealer problems will open the morning session on December 6, with Dan Schmidlin, Schmidlin Bros., Toledo, Ohio, and Hugh Thompson, Thompson Heating Co., Cincinnati, Ohio, already scheduled to appear. A question and answer period will follow the presentation by the panel to open the session to discussion of subjects that might not be covered in the formal speeches.

Guy A. Voorhees, technical secretary of the Association, next will outline plans for the 1951 Indoor Comfort Conferences.

A luncheon on December 6 will honor Dean Lorin G. Miller, Michigan State College, in recognition of his service to the Association and to the industry. During the past 19 years he has been administrator of the Michigan State College Warm Air Heating Short Courses and also chairman of the Association's Technical Education Committee.

Activity reports of Association Committees and reports of research work in cooperation with the University of Illinois will be presented at the afternoon session, immediately following the luncheon. Reports will be rendered by Frank L. Meyer, Meyer Furnace Co., chairman of the Research Advisory Committee; William D. Redrup, The Majestic Co., chairman of the Installations Codes Committee and Application Engineering Advisory Committee; Charles L. Sapp, Farquhar Furnace Co., chairman of the Legislative Committee and C. W. Nessell, Minneapolis-Honeywell Regulator Co., chairman of the Field Investigation Committee. Robert W. Roose, Morris E. Childs and James R. Jamieson, all members of the research staff, University of Illinois, will report on the investigations they are conducting in the laboratory and in the Association's research residences.

St. Louis Group entertains

Following the business sessions on the first day, December 5, the annual cocktail party for all those attending the convention is to be held. The party is being arranged by the St. Louis Convention and Entertainment Committee, Jack Searles, White-Rodgers Electric Co., chairman.

All members of the warm air heating industry are invited to attend the convention, the agenda for which Chairman Irving E. Seith and his Program Committee are working up to present a comprehensive picture of present conditions and their probable effect on the warm air industry.

Use a planned testing Routine

Service Is Speeded, Fuel Saved, When Combustion Checks Are All-Inclusive

by
George Gardner*

WITH THE CAREFUL, painstaking and detailed planning devoted to organizing and carrying through an oil-burner service program, the importance of planning the combustion testing procedures to be used is at times overlooked. Too frequently the serviceman is simply handed a combustion test kit and instructed to "use it before leaving the job." In many cases, he is not furnished with a complete kit or the kit may contain instruments which through lack of attention are not in usable condition. The usual result is a wide variety of test procedures. Different servicemen use different practices, which makes it difficult for them to exchange information. The product of lack of planning and system in this phase of service work can be a confusion that can easily jeopardize the success of an otherwise well-planned service program.

The value of combustion testing in servicing and adjusting pressure gun burners is widely recognized. Unplanned, haphazard methods are better than none at all but five complete dividends are possible with orderly, systematic routine.

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What are these five dividends? First, combustion testing provides the only sound and accurate method of evaluating burner performance. Second, combustion testing provides the easiest method of locating the reasons for poor performance. Third, it is the only means of evaluating the effectiveness of corrective steps intended to improve combustion. Fourth, combustion testing permits more intelligent on-the-job planning of work required to improve combustion. Fifth, and by no means least, combustion testing results can be effectively used to sell the customer on the value of the services rendered if properly reported to the customer. These are the five dividends which accrue from well planned and faithfully executed combustion testing.

Four factors are involved in achieving full return from combustion testing. First, the serviceman should use a complete combustion testing kit. Second, he must use a carefully planned, systematic combustion testing procedure. Third, he must use systematic, routine methods of recording test data. Fourth, a method must be adopted to pass the results of combustion testing on to the customer. Anything less than these will almost guarantee an incomplete return from his work.

In considering a complete combustion test kit, it is well to remember that no single instrument will compensate for the lack of other instruments. A complete kit will include the following items as a minimum: (Figure 1).

(1) Thermometer for measuring flue gas temperatures.
(2) A CO_2 Tester.
(3) Draft Gauge.
(4) Smoke Tester.
(5) Oil Pressure Gauge (0-150 psi).
(6) Vacuum Gauge (0-30 inches mercury).
(7) Flame Mirror.
(8) Stack Loss Slide Rule.

In addition to these items the following optional equipment is recommended: (Figure 2).

(9) Room Temperature Recorder.
(10) Operation Recorder.
(11) Outdoor Temperature Recorder.
(12) Room Temp. Thermometer.
(13) Grill Velocity Meter.
(14) Sling Psychrometer.

While these last (9-14) items are considered optional since they are not required on all jobs, they will easily pay for themselves in the hands of many servicemen and further there will be conditions occasionally encountered where they will be essential for complete analysis of the service problem.

It should be strongly emphasized that a complete combustion test involves both observation and measurement. Such a procedure should not only in-

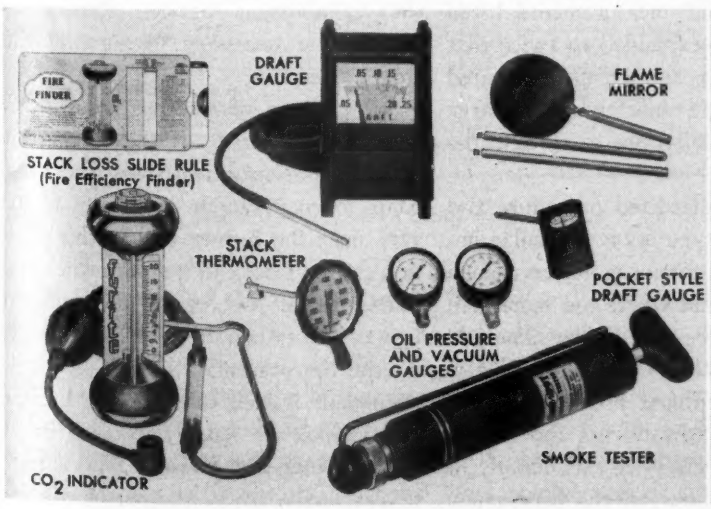

Fig. 1. *Minimum components of a combustion test kit.*

Fig. 2. *Optional items which can be used to advantage.*

clude those measurements (CO_2 and stack temperature) required to compute percent combustion efficiency or stack loss but must include measurements and observations that will enable the test operator to intelligently estimate and carry through the corrective steps required to achieve and maintain proper combustion performance. Obviously there are a very large number of observations in particular which could be made. The twenty observations and measurements shown on Combustion Service Record, Figure 3, comprise a test procedure which has been used with substantial success. Summarized very briefly, this procedure includes:

(1) Observation of flame ignition.

(2)-(3) Observation of flame color and shape.

(4) Observation of flame impingement on combustion chamber or other surface.

(5) Observation of odor near burner or barometric regulator.

(6) Observation of starting, running and afterfire noise.

(7) Observation of soot deposit or carbon formation in flue passages or combustion chamber.

(8)-(12) Measurement of overfire draft and flue draft.

(9-10-11) Measurement of flue gas temperature and combustion air temperature and calculation of net stack temperature.

(13) Measurement of CO_2 in flue gases.

(14) Measurement of smoke density of flue gases.

(15) Calculation of combustion efficiency.

(16) Observation of flame cut off when burner is shut down.

(17-18) Measurement of oil pressure delivered by pump and of oil feed line suction.

(19) Record of nozzle size, type and spray angle.

(20) Estimate or measurement of combustion chamber size.

It will be noted that with complete information listed above many experienced service managers could, without actually having seen the installation, make a reasonably accurate estimate of the corrective steps which will be required to obtain proper performance.

Many servicemen will raise the objection that such a combustion test requires too much time. The writer has found it possible without any difficulty to carry the complete procedure out in 15 minutes. Using a partial combustion test may reduce this test period to about 8 or 10 minutes. Certainly the added information obtained is well worth the few minutes of time. Servicemen frequently spend more than 15 minutes obtaining only part of the listed data due to lack of an orderly procedure.

When to use only part of Routine

There are circumstances however which can justify using only part of this routine. As an example, assume that the initial test through observation of flame cut off (step 16) indicates that a simple adjustment of air shutter or draft or sealing of air leaks will probably be sufficient. Data recorded during such a test is shown in Figure 3. In this case, it would be advisable to make the draft and air shutter adjustments, seal air leaks and check CO_2 and smoke to determine whether the desired result has been obtained. If these corrective steps are not sufficient, then the test data should be completed.

The service record form provides both the procedure for running the combustion test and a method of recording the test data which has been used successfully in pressure gun service work. The form illustrated is self-explanatory. The order selected has been chosen to permit obtaining maximum information in minimum time. The 20 observations and measurements listed could easily be expanded to twice that number, but experience has indicated that these 20 are sufficient in the large majority of installations to permit adequate analysis.

Using a standardized procedure and record of this type is of particular importance where two or more servicemen are employed and where the same man cannot always be sent to the same job.

The combustion service record also provides a simplified listing and code for noting the adjustments and repairs made during the service call. Finally, it affords a reminder to the servicemen of those things which should always be checked before leaving the job. Checking these requires very little time and will prevent many call backs.

The Combustion Service Record is intended to constitute the dealer's record of a service call. As such, it is properly filed in the office to be available for inspection prior to the next inspection or service call. It is not considered suitable as a customer report form.

However, some method of reporting the results of the service call to the customer is vital to the success of a service contract program. Such a report emphasizes to the customer the value of service received and the savings resulting from such service. A suggested form for customer's report is illustrated in Figure 4. This form incorporates certain features essential to the full success of a contract service program. First, it is a form of advertising since it brings the dealer's name before the customer at stated intervals. Second, it shows the customer the improvement in combustion efficiency produced by the service work. Third, it provides the customer the opportunity to evaluate the importance of service work in terms of fuel economy. By including the fuel economy table, the customer's attention is directed to this factor without necessitating a direct statement by the dealer which can be misconstrued by the customer to mean that these savings will accrue to him indefinitely without periodic service checkups. Fourth, the form provides room for a personal message from the dealer.

Nine Steps for combustion Test

The following nine steps are listed on the Combustion Service Record as preparation necessary to running the combustion test:

(1) "Open main burner switch." Never start burner at the thermostat or remote control switch (if present). Main burner switch is usually at or very near the burner and in this position the operator can quickly switch the burner off if observation indicates an unsatisfactory condition on initial start. At the time the main burner switch is opened, it is well to check the burner fuses which are usually installed in or at this switch box housing. This is particularly true where the customer's report indicates no heat.

COMBUSTION SERVICE RECORD

For Use with BACHARACH Combustion Testing Instruments

HIGH PRESSURE GUN-TYPE BURNERS

Owner John Doe
Street 426 Maple Drive
City Centerville Phone CE-5481-J
If not home get key 428 Maple Drive
Occupant Same
Street
City Phone
Work Authorized ☑ by Owner ☐ by Occupant John Doe
Signature of person authorizing work

Order No. 4244 Date 2-22-50
Taken by Smith

Condition Reported

☐ No Fire ☑ Insufficient Heat
☑ Excessive Oil Consumption ☐ Odor
☐ Burner Ignites, then Goes Out ☐ Noise
☐ Burner puffs . . . ☐ On Start; ☐ On Stop
OTHER

When Service Wanted

DATE 2-23-50 TIME Before Noon
☐ PHONE FOR APPOINTMENT

Job Assigned to:

NAME Ryan DATE 2-23-50

Job Completed:

DATE 2-23-50 TIME 10 25 AM
BY Tom Ryan
Signature of Service Man

I—Preparing for Combustion Test

1. Open main burner switch.
2. Inspect and clean out accumulated oil in combustion chamber.
3. Advance thermostat. (5-10° F.)
4. Close remote control burner switch.
5. Make ¼" diameter hole in flue pipe and overfire (for BACHARACH test instruments).
6. Insert TEMPOINT thermometer (200-1000° F. range). through ¼" diameter hole in flue pipe.
7. Open inspection port or door.
8. Adjust flame mirror.
9. Close main burner switch. (Starting burner.)

II—Combustion Test Procedure and Inspection Data

STEP	Observe—and mark with √		TEST NO. 1	2	3	4
1	FLAME IGNITION	Instant	✓	✓		
		Delayed				
		Doesn't Ignite				
2	FLAME COLOR If flame shows two colors check both	Orange		✓		
		Yellow	✓	✓		
		White	✓			
		Sparks				
3	FLAME SHAPE	Uniform	✓			
		Lop-sided				
4	FLAME IMPINGEMENT	At bottom				
		At sides				
		At rear				
5	ODOR Near burner; observation door, draft regulator	None	✓			
		Slight				
		Heavy				
6	NOISE Mark (x) when Excessive Mark (√) if Moderate	Rattle				
		Hum				
		Pulsation				
		Start				
		Running				
		After fire				
7	SOOT DEPOSIT Mark (x) if Heavy; (√) if Light; (o) if None	Flue				
		Comb. Chamber				
		Furnace/Boiler				

STEP	Observe—and write in data		TEST NO. 1	2	3	4
8	(Close observation door) OVERFIRE DRAFT in inches Water		.030	.020		
9	TEMPOINT READING FLUE GAS TEMP. °F. When constant temperature is reached		710	610		

STEP	Observe—and write in data		TEST NO. 1	2	3	4
10	BASEMENT AIR TEMP. °F.		60	60		
11	NET STACK TEMP. °F. Subtract basement temp. (step 10) from flue gas temp. (step 9)		650	550		
12	FLUE DRAFT in inches water, (use same hole used for stack temp. test)		.035	.025		
13	FYRITE READING % CO_2 (use same hole used for stack temp. test)		5½	9½		
14	TRUE-SPOT SMOKE READING (use same hole used for stack temp. test)		1/2	1		
15	FIRE EFFICIENCY FINDER % COMBUSTION EFFICIENCY		60¼	76½		
16	(Open Main Burner Switch) FLAME CUT-OFF (Seconds) Estimate time required in seconds for flame to disappear after burner stops		2	2		
17	(Close Main Burner Switch) OIL PRESSURE (psi) Measured with oil gauge installed on pump					
18	FEED LINE SUCTION (inches) Measured with vacuum gauge installed in feed line					
19	(Open Main Burner Switch Remove Nozzle Assembly) NOZZLE (service if necessary, then reinstall)	Size—Gph				
		Type—S/H				
		Spray Angle				
20	COMBUSTION CHAMBER SIZE	Depth "				
		Length "				
		Width "				
		Area sq. in.				

III—Adjustments and Repairs

Make adjustments, install replacements, and tune-up as required. Indicate, in spaces provided below, work done before repeating the tests listed under "II".

Write in "A" for "Adjust"; "C" for "Clean", "R" for "Replace". Mark "√" for other work, and describe it on the back of this sheet, if necessary.

WORK PERFORMED	BEFORE TEST NO. 2	3	4
BURNER AIR SHUTTER	A		
SEAL AIR LEAKS	✓		
BURNER AIR BLOWER	C		
TURBULATOR			
AIR CONE			
BAROMETRIC DAMPER	A		
BURNER IGNITION—SAFETY CONTROL			
LIMIT CONTROL			
ELECTRODES			
ELECTRODE CABLE			
TRANSFORMER			
AIR FILTERS	R		
NOZZLE			
NOZZLE STRAINER			
PUMP STRAINER			
PUMP			
OIL FILTER	R		
OIL PRESSURE			
PUMP CUT OFF			
COMBUSTION CHAMBER			
BURNER POSITION			
BELT-COUPLING			
OIL LINE			
CHIMNEY REPAIRS			
FURNACE/BOILER CLEANED			

IV—Final Inspection

(a) Repeat the combustion check-ups listed under "II", and enter data in proper spaces.
(b) Check each of the following for proper setting, operation, or condition.

☑ MAIN BURNER SWITCH ☑ THERMOSTAT
☑ BLOWER CONTROL ☑ LIMIT CONTROL
☑ PUMP CONTROL ☑ LUBRICATION
☐ LOW WATER CUT OFF ☑ OIL LEAKS
☑ CIRCULATING-AIR FAN ☑ AIR FILTERS

CONDITION OF FUEL OIL Good
FLAME FAILURE CUT OFF TIME 120 SEC.
IGNITION CUT OFF TIME 45 SEC.

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Fig. 3. *Combustion Service Record, which details both the steps to be taken for a complete test and a means of recording the data obtained.*

(2) "Inspect and clean out accumulated oil in combustion chamber." It is a safe practice to always make this inspection before starting the burner for the first time. Any visible accumulation of oil should be cleaned out with rags. Oil which has been absorbed by the combustion chamber usually can be burned out if observation port is left open. In some cases, it will be necessary to remove the air shutter or open it to the maximum to facilitate burning this oil. Never attempt to burn the oil out of the pot if a visible accumulation in a pool is observed. If air shutter is removed or opened, mark the air shutter position before this is done and readjust it to the original position after the oil is burned out of the combustion chamber.

(3) "Advance thermostat (5-10°F.)." This will insure continuous burner operation for the period of the combustion test.

(4) "Close remote control burner switch." Not all installations will have such a switch. If present, it will probably be at the top of the basement steps or in the first floor living quarters (probably near thermostat). It will save time to inquire of the customer on a new job as to whether there is such a switch.

(5) "Make ¼" diameter sampling hole in flue and overfire (for test instruments)." Hole in flue should be between the flue collar of the furnace and the barometric regulator and at least 6" from the regulator. Overfire hole may be provided in some cases by removing a bolt from the inspection port or door. If this is not possible, it may be possible to provide for insertion of instrument tube through air louvres in the door. This will frequently be the case where the furnace or boiler has been converted from coal to oil. In this case, obtain a piece of cardboard or stiff paper sufficient to cover the entire air louvre opening. Air louvres can then be opened just sufficiently to permit insertion of instrument tube and the paper or cardboard can be held over the louvre openings when making measurements. In some cases, it will undoubtedly be necessary to drill a ¼" diameter hole overfire. Both flue and overfire sampling hole can be sealed with a size number 12 or 14 self-tapping type screw before leaving the job.

(6) "Insert stack thermometer (200-1000°F. range) through ¼" diameter hole in flue." The end of the thermometer stem should reach into the center third of the flue pipe diameter.

(7) "Open inspection port or door."

(8) "Adjust flame mirror." This should be assembled and adjusted so that flame can be easily inspected.

(9) "Close main burner switch (starting burner)." It is advisable to have a lighted flashlight ready when this is done to permit quick inspection for oil mist in the combustion chamber if ignition failure results.

At the instant the main burner switch is closed, the writer also follows the practice of starting to count slowly "one and two and three." If flame ignition has not occurred at the court of three, main burner switch is opened, reason for ignition delay investigated and corrected before proceeding with the combustion test. Directing a flashlight beam down into the combustion chamber immediately after the main burner switch is opened will determine whether ignition failure is due to oil stoppage or ignition circuit failure. Flame mirror can be used to inspect for ignition arc.

Results of first combustion test should be entered under Test Number 1. In all cases, it is advisable to include steps 1 through 16 in this first test. If these first 16 observations and meaurements indicate that sealing air leaks or adjusting air shutter and/or barometric regulator are probably sufficient to obtain required improvement in combustion efficiency these adjustments should be made. If the increase in CO_2 seems to bear out this conclusion without excessive smoke, test (steps 1 through 16) should be repeated and data entered under Test 2. In this case, under "III—Adjustments and Repairs," in column "Before Test Number 2" enter an "A" opposite "Burner Air Shutter" and "Barometric Damper" and make check mark (√) opposite "Seal Air Leaks."

If, however, the data and observations in steps 1 through 16 indicate more serious trouble (delayed ignition, sparks in flame, lopside flame shape, flame impingement, odor, sooting, low combustion efficiency, excessive smoke and/or delayed flame cut off, noise, etc.) it is advisable to complete measurements 17 through 20. Pressure gauge will be installed on pump and vacuum gauge in oil feed line at pump and these measurements recorded. Nozzle assembly can then be removed and data entered for step 19. Combustion chamber size can be entered and a sketch of chamber shape be made at bottom of sheet if operator feels it is necessary.

Where the whole test is run (steps 1 through 20) the data should be carefully studied before attempting to repair or adjust the burner. Adjustments, repairs or replacements then made should be properly noted for future reference under "Adjustments and Repairs." In case the nozzle size or type is changed this data should be entered under step 19. Any change made in the combustion chamber should be noted under step 20. Change in pump pressure and measurement of feed line suction (if corrective steps have been taken) should also be entered. Combustion test should then be run steps 1 through 16. Finally, assuming that no further adjustment is shown to be necessary by Test 2, the points listed under Part IV, "Final Inspection" should be inspected and checked off. As a final step, the combustion service record can be returned to the office and used to fill out the Customer's Report shown in Figure 4.

CUSTOMER'S REPORT for Mr. John Doe (NAME) **of Call Made** 2-23-50 (DATE)

Combustion Tests Before And After Service Work Show:		
BEFORE		AFTER
5½%	FYRITE READING % CO_2	9½%
650°F	NET STACK TEMPERATURE	550°F
1½	BACHARACH SMOKE NUMBER	1
60%	COMBUSTION EFFICIENCY	76%

Your burner has been adjusted to the maximum combustion efficiency of which it is capable. Combustion efficiency has a direct bearing on your fuel bill. Savings normally resulting from increased combustion efficiency are shown below.

SAVINGS FOR EVERY $100 FUEL COSTS BY INCREASE OF COMBUSTION EFFICIENCY
ASSUMING CONSTANT RADIATION AND OTHER UNACCOUNTED FOR LOSSES

From an Original Efficiency of:	To an Increased Combustion Efficiency of:								
	55%	60%	65%	70%	75%	80%	85%	90%	95%
50%	$9.10	$16.70	$23.10	$28.60	$33.30	$37.50	$41.20	$44.40	$47.40
55%	—	8.30	15.40	21.50	26.70	31.30	35.30	38.90	42.10
60%	—	—	7.70	14.30	20.00	25.00	29.40	33.30	37.80
65%	—	—	—	7.10	13.30	18.80	23.50	27.80	31.60
70%	—	—	—	—	6.70	12.50	17.60	22.20	26.30
75%	—	—	—	—	—	6.30	11.80	16.70	21.10
80%	—	—	—	—	—	—	5.90	11.10	15.80
85%	—	—	—	—	—	—	—	5.60	10.50
90%	—	—	—	—	—	—	—	—	5.30

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Services Rendered

☑ Seal Air Leaks	☑ Air Filters	☐ Comb. Chamber
☑ Air Adjustment	☑ Lubricate	☐ Fan/Pump Control
☑ Burner Blower	☐ Fan	☐ Rebuild Burner
☑ Bar. Regulator	☐ Nozzle	☐ Strainer
☑ Burner Control	☐ Ignition	☐ Oil Pump
☑ Limit Control	☐ Transformer	☑ Oil Filter
☑ Thermostat	☐ Furnace/Boiler Cleaned	

Important: Regular service check-up with modern COMBUSTION TESTING INSTRUMENTS will insure maximum ECONOMY, COMFORT, and CONVENIENCE.

A service contract would have saved you money and insured your comfort during the recent cold spell. Would like to discuss this with you by phone at your convenience.

Jack Smith (SIGNATURE)

Fig. 4. Customer's report, *filled out with the results of the test and given to the customer as a record of services rendered and before and after combustion test readings.*

To Tap or Not to Tap?

Must Be Decided Before Adding Water Heater to Sectional Boiler

by
Fred Feigenbaum

HOW MANY sections shall I tap? This question asked by the installer, might be considered a measure of the oilheat industry's reluctance or inability to be guided by the findings of its servicemen. The same question has been asked over and over again, ever since year-round hot water hookups to steam boilers have been part of the oilburner installation. It calls attention to the lack of thought that goes into a large percentage of all oilburner work; the attitude responsible for Mills-rule heat-surveys, six per cent CO_2, and many other prevalent errors.

Joe Grom, installer, is faced with the job of piping domestic hot water to a seven-section Billingsgrate boiler, formerly burning coal. He has never seen this boiler before, and is trying to decide whether he should tap three, four, or five sections. Just as he is on the verge of making this decision Mike McGorp, the installation foreman, appears on the job. Joe throws him the ball.

Comparison is made between this and the Flamthorp sectional boiler they "manifolded" several months ago. That one was tapped four out of seven; works perfect, according to Mike; never a bit of trouble with it. A decision is finally reached, based on this and other precedents, just like in court. Tap four.

Then the secondary problems. Which four? What size? This ride on the roller-coaster takes another fifteen minutes. Sections 2, 3, 5, and 6 will be tapped 1¼" to feed a 1½" manifold. After some discussion about the progress of other elements of the job Mike leaves, feeling that he has successfully dealt with a "situation."

When the installer asks, "How many sections shall I tap?" he is asking the wrong question. He almost always gets an answer giving him a wrong number. Any answer is wrong if it is not, "All" or "None." The question that should be asked is: "Should I tap or not?" The answer should be based on information that is often not easy to get, the relation of the push-nipple ports to the water level of the boiler.

Most of the boilers built before the oilburner era, and many since, have push-nipples about three inches in diameter. These are usually high above the water line, often well above the gauge-cocks. There can be no circulation of water between these sections; each is an isolated part of the boiler capable of generating steam independently of the others. This is of little importance during the heating season, but if the boiler is to be used during the summer to make domestic hot water it becomes a severe defect. Provision must be made to equalize the temperatures of the sections, for two good reasons. First, to prevent heating the house when heat is not required; second, to provide the owner with hot water as economically as possible. Economy is always stressed in selling oilburners. Why should the purchaser put heat into part of the boiler out of which he gets nothing?

Servicemen usually find themselves beating their brains out combatting the arguments against tapping every section. Most of them give up after they hear several repetitions of: "Nobody taps every section. We've got dozens of jobs only partially manifolded and they work perfectly. Besides it costs money to tap every section. We've got to sell jobs in competition with the others who don't tap every section."

Most Tappings too Large

If it were possible to get beyond that point, methods might be found by which it would be as easy and as cheap to tap the whole boiler as to tap only half. In the first place most tappings are made larger than necessary. It is the practice of some to make the tappings as large as the run of the manifold, or one size smaller. Most small boiler manifolds are 1½" for generators, 2" for tankless heaters.

It is very difficult to cut and tap a hole squarely in the center ridge of a section for large sizes like 1½" or 1¼". And even if it is within a degree or two of square there is enormous trouble in aligning large size union faces already solidly attached to the cast-iron fittings of the manifold. There is a great loss of time and effort, much likelihood of leak, and much strain throughout. It is fortunate for many installers that these old boilers were made of stern stuff.

Many of the die-hards have compromised the height of the manifold by using swing-joints downward into it. This places the generator six or more inches below the tapping level, preventing many degrees of effective heat from reaching it. These extra fittings save time and trouble, but cost money themselves, and reduce the efficiency of the hookup.

Tap for correct size Branches

It is simple piping mathematics that a 1½" manifold could be fed by four ¾" branches. Due to some friction factors it might be advisable to use 1" if there were only four branches, but if five or more sections are to be tapped, ¾" branches would supply all the water the manifold could handle. So the first thing in reducing the cost of the manifold is to tap for the cerrect size branches.

One of the arguments is that small-size piping in steam hookups is apt to plug up. This is very unlikely in a manifold which is located close to the water-line. There is almost never any accumulation in upper assemblies; practically all rust is swept down through the generator, building up from the bottom of it around the coils, and in the lower circulation piping. You can start building small-branch manifolds with complete confidence that the rest of the hookup will become plugged solid long before the manifold gets dirty enough to slow down circulation.

The fitter will find much more flexibility when he works with smaller nipples. There will be much less difficulty in making union-faces meet in the stiff joints necessary for a high manifold. It is good practice to use long nipples for greater flexibility. There is no need to use three- or four-inch nipples for looks;

six-inch nipples will be easier to handle; there will be less strain at the boiler tappings, and at the manifold-tees. Don't be overly concerned that the manifold will be 15" out from the boiler. It will look fine, and it will be correct fitting. And the job will work.

Because the labor cost of installing a manifold of standard pipe and fittings is high, oilburner dealers should look into the possibilities of using solder-fittings. It is strange that so few have gotten around to this modern method. It is a practical solution; the only hard labor left is the cutting and tapping. Those who have adopted sweat-fitting for manifolds would not consider going back to stone-age methods. The alignment problem is non-existent; any reasonably straight tapping can be made to line up in the loose joints before the solder is poured.

The manifold can be of large-size solder-tees, or standard pipe-tees with adaptors to the copper branches. The latter method is cheaper, but the complete copper manifold is much prettier and easier to assemble. There are no wrench-marks to be covered with black paint.

Some shops which have the equipment have tried welding the manifold branches. Six-inch nipples are cut in half; one part is inserted into the tapping, the other into the manifold-tee.

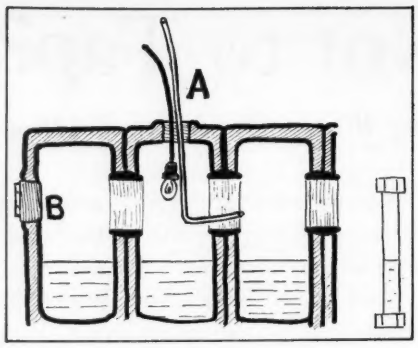


Fig. 1. *Push nipple height can be ascertained with or without light by using an L-shaped wire probe as shown at "A." If boiler has blow-off outlet, "B," it usually is in line with the nipple ports.*

The two halves are welded in place. One of the nipples is left whole, and the manifold is swung on it. This stabilizes the assembly for the welding. The objection to this method is that such large equipment is required for so small a job. If there for another purpose, such as fabricating the tank, it would be good economics to use it for the manifold.

Push-nipple size and relative height come under the head of Uncollected Information. There don't seem to be any published statistics on the subject, which probably indicates that there are not many people who demand this knowledge, a point we tried to make in an earlier paragraph.

Boiler catalogs contain this information, but it would be an enormous job assembling it from material published since the beginning of the century. Pipefitters who have disassembled many boilers often have a good mental picture of the insides of most of the pre-oil-burning boilers. These men would tell you that you couldn't go wrong installing a manifold on any former coal-burning boiler. Practically no old small-house boiler they ever saw had a nipple-size more than four inches, and all nipples at least two inches above the water line. Like the old recipe that began, "Break three dozen eggs . . ." the best formula for getting this information is to disassemble several dozen boilers.

Fig. 1 shows how it might be possible to decide push-nipple height in many boilers. There is generally at least one plugged opening in some section directly over the center-line of the boiler, sometimes a safety-valve port. Plugs in steam-boilers are difficult to remove; if so, one can be chiselled out in about ten minutes. An L-shaped probe is made of stiff wire, and inserted in this opening. The contour of the nipple can be felt with this, and the height of the lowest point gauged in relation to the water-line. The nipple on the opposite side of the section should be likewise probed, to check the first finding. A peanut-type extension light might be helpful in this operation.

A number of boilers have a blow-off

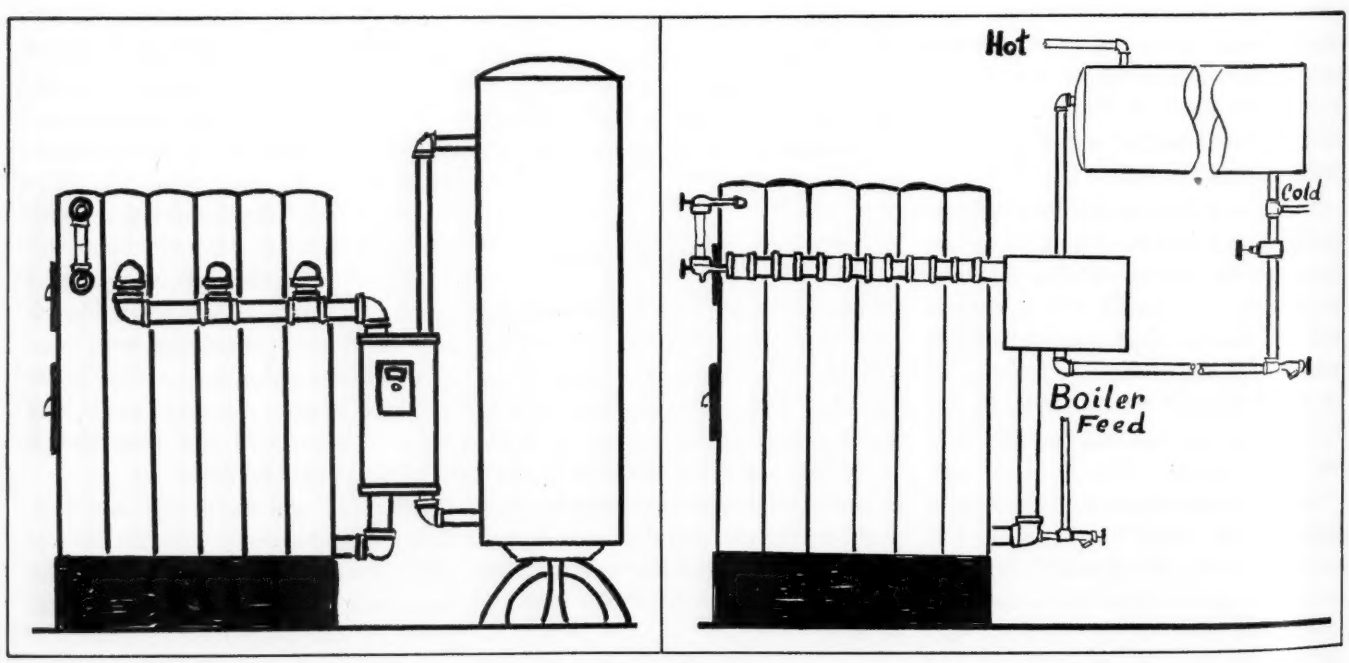
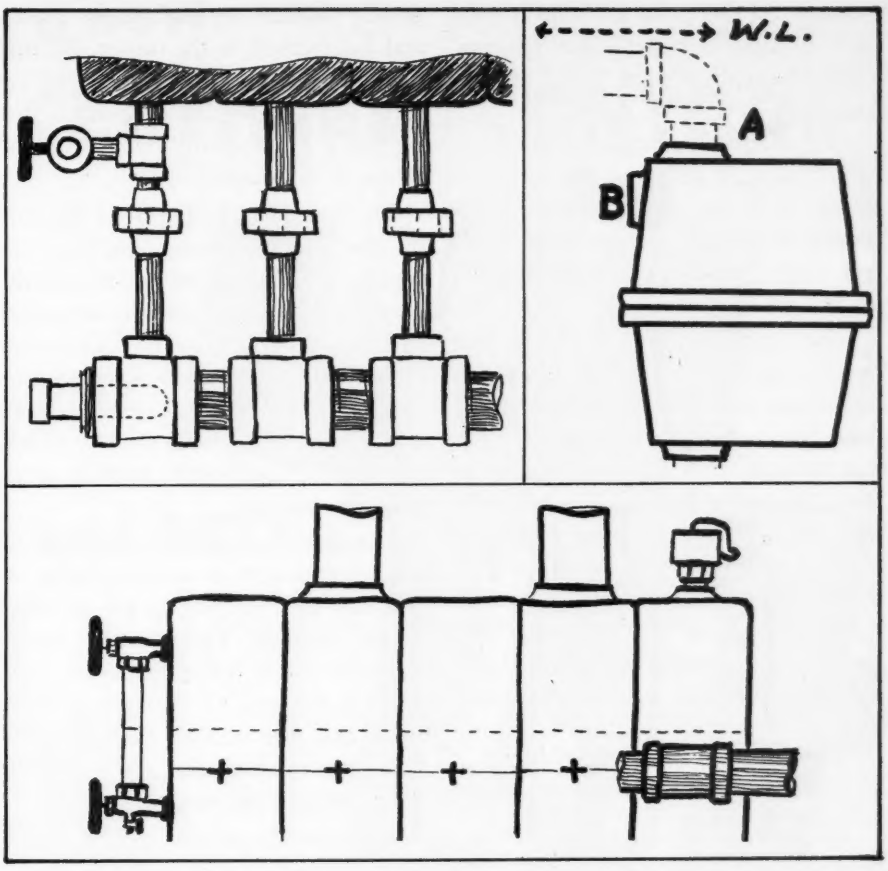


Fig. 2 (left). *Combination of boners often found on jobs where water heaters have been added to boilers.*
Fig. 3 (right). *How a smart installer might pipe the same boiler and correct the defects described in the article.*

port in the front section. This is generally centered with the push-nipples, and is usually from 1¼" to 2". When removed a good view of the push-nipple can be had. It is often possible to determine from the position of the blow-off plug that the push-nipples could not possibly be in the water-line region, without removing the plug. The sections would therefore have to be tapped. Often just looking at the upper side of the boiler flues will yield the same information. The water-line would be lower than topside of the flues in such a boiler. It would not be possible to make the opposite deduction from this evidence. In order to discover that tapping would be unnecessary the exact level of the nipple must be known.

One particular boiler-type gets special mention. This is the "pork chop" or split-section boiler. In these the right-hand side of each section does not know what the left is doing. Dealers who have installed a complete manifold on one side have learned that the other side generates steam. It is necessary to build two complete manifolds on this type and tie them together in order to equalize all the temperatures.



Upper left: *Standard pipe fittings used in manifold construction, with full size to the generator inlet, branches half manifold size when there are four or more branches.*

Upper right: *Using tapping "A" places generator too far below water line. Boiler take-off should be piped level to "B."*

Bottom: *Chalk line levelled 2 to 3 ins. below water line, with tappings centered on section and manifold piped at the same level.*

Installation "Don'ts"

Fig. 2 illustrates a combination of boners often found by servicemen, sometimes all together on the same job, believe-it-or-don't. The disadvantages of large-size manifold branches have been discussed. Note particularly that the generator appears well over a foot below the tapping level, because the swing-joints made manifold fitting easier, and because a generator with a topside inlet was used. It is a physical fact that the temperature at any point in such outside piping cannot be higher than the temperature at the same level in the boiler. In summer months there is much stratification of boiler temperatures, chiefly due to long off-periods, so the entrance temperature of this generator would be probably 25 or more degrees less than at the tappings. A great amount of useful heat is trapped at a higher level. The lower-temperature-difference at the coil keeps heat transfer low.

The temperature in the untapped sections will always be well up toward the boiling point, since their only means of heat loss is into the flues during off-periods, a small amount by conduction to the tapped sections, and through the insulation into the boiler-room. The hot-water control, located in the generator, could probably not be set above 140 without causing the temperature in the untapped sections to reach the boiling point. A better location would be in the manifold, where the heat-rise would be more rapid when the burner is running. For absolute steam prevention the best location would be in one of the untapped sections; but in no case would it be possible to deliver more heat to the generator than a certain maximum, which would be a lot less than if the system were properly piped.

The use of the vertical tank takes away much of any effectiveness that might be left after the impossible combinations on the steam boiler side. Many oilburner men have not yet learned that the storage-tank in these year-round indirect hookups must be horizontal, and as high as possible above the generator. A vertical tank like this one will never get hot to the bottom in the summertime, even with correct piping in the other parts of the system. During the winter, when the boiler is continuously close to 212 there will be some heataing of the lower part by conduction, not by circulation. Recovery is always slow to a vertical tank; the over-all temperature-difference between the coil and the tank is changed less by the inflow of cold water. The return pipe of a horizontal tank feels the temperature change from this source quickly, causing circulation to be accelerated.

Fig. 3 depicts what might be done by a smart installer piping the same boiler. Assuming that the manifold-run were to be 1½" the six inlet-branches would be ¾". The gauge glass would be extended toward the front of the unit to permit a takeoff from the front section. The lower gauge-cock would be teed off the side of the front branch.

The aquastat would be located in the first manifold-tee. This is not shown, to avoid confusion with the gauge-glass

hookup. At this point it would quickly feel changes in boiler-water temperatures, preventing steam even at high settings.

A modern horizontal-type generator would be used. Its entire coil would be higher than the top of the generator shown in Fig. 2, and therefore would get much hotter water than available to the other.

The lower part of the piping illustrates a method that will help keep the horizontal piping clean. Most men who have tried to flush lower circulation piping through an ordinary drain-cock, or even through a large gate-valve, know the difficulty of removing any great amount of dirt from it. By placing the boiler-feed-line so that the feed-water passes through the entire horizontal run, much of this dirt is swept into the boiler each time the boiler water is replenished.

Hook-up to help make lower Piping Self-Cleaning

Placing the storage-tank horizontal makes rapid circulation possible. The temperature-difference between the top and bottom of the tank is small. The entire tank is kept hot most of the time. By allowing the cold water to come into the side of the vertical return-pipe recovery is accelerated. Most of the cold water goes to the tank, because there is less resistance in that direction, but some percentage of it goes downward and reaches the generator coil, chilling it, and speeding up the circulation of the water around the coil. This hookup makes the lower piping self-cleaning to some extent. The positive water movement helps prevent accumulation, especially in the horizontal run.

By closing the gate-valve below the cold-water inlet it becomes possible to reverse-flush nearly all the piping with force through the drain-cock. A few buckets a year drawn in this way will keep circulation intact for years. The coil, and the lower horizontal pipe, where most of the sludge accumulates, benefit especially from this arrangement.

Some servicemen attempt to remedy a summer-heating condition by raising the water in the boiler to the level of the push-nipples. In many cases this level is completely above the entire gauge-glass. One filling will often last the whole season; if it does not it is usually difficult to explain the reason and the method to the owner. Because it usually involves filling to the safety-valve level, to be sure of covering the nipples, a lot of useful heat is stratified where it is unusable.

The real difficulty begins at the start of the heating season. Because the weather alternates from cold to mild the owner is required to give the water-line considerable attention. If he attempts to have steam when the water is high the piping is likely to develop many knocks. Operating with the low water-line on mild days results in steam when it is not wanted.

Frequently a serviceman encounters a job that is correct in most details, except that the front-section has no outlet to the manifold. The installer's reason was that the gauge-cocks or try-cocks were in the way. It happens that the front and rear sections have more exposed surface than the others, and are more likely to generate steam.

An outlet from such a front section can be provided by extending the gauge-glass outward several inches, and installing a tee between the lower cock and the section. A half-inch tapping is made at a convenient point in the manifold-run, and copper tubing is used to join these two points. It is not expected that the front-section will be at as low a temperature as the others when the burner is running. Some heat will accumulate, but this will be delivered into the manifold during the off-period, so that at each start the front-section will be at about the same temperature as the others. There will be little likelihood of its rising to the boiling point during the short running time of the burner.

Methods like this have been tried with other untapped sections, with varying results. It is generally difficult to drill the cast-iron boiler at the proper places because the manifold is in the way. The tubing must not be trapped in any way. Circulation is impeded by air pockets. In general it is a cumbersome operation, and hardly fits into the serviceman's routine. Besides there are often other boners in the hookup that might detract from any efficiency gained. The best practice is to try to convince the owner that a complete overhaul of the hookup is necessary. But be careful; your boss may have put the job in.

Present steel demands By Military seen as 4%

LATEST MUNITIONS BOARD'S estimate of total steel to be required for military purposes in the 12 months starting November 1 is 4.1 million tons, reports "Steel" magazine in its September 11 issue. This is almost double the tonnage consumed by the military in the fiscal year ended June 30 and represents about 4% of the industry's capacity of 100,000,000 tons.

This estimate is for the domestic program only and does not include the Atlantic Pact commitments, which will be considerably smaller and the bulk of the steel for them will be furnished from European mills. The steel industry apparently will be able to superimpose additional military demands on current civilian needs without acute discomfort except for sheet and strip and certain sizes of seamless tubing, continues *Steel* magazine.

In the August 28 issue the magazine revealed that steel shipments for direct war uses reached a peak of 22.8 million tons, or 38% of total steel shipments in 1943, and in 1944, the year of record steel production, totaled 19.9 million tons or 32.9%. These figures were compiled by the American Iron & Steel Institute.

In addition to the direct war uses, many others contributed to war and essential civilian purposes, such as containers, railroads, trucks, oil, mining and agriculture. The railroads were among the largest and most consistent users, taking from 7% to 9% of all steel shipped each year.

From the beginning of 1941 through April 1945 makers of ordnance, projectiles and tanks received 9% of total shipments; 5% went to construction of defense plants, cantonments, bases and similar projects; 13% to ship building, both naval and commercial. Most of these ships and many of the plants and cantonments erected during the war still are in use or stand-by condition.

The total amount of finished steel received by shipbuilders and makers of ordnance, projectiles, tanks and aircrafts during this 52 month period was 63,568,000 tons, almost ¼ of total shipments and only 2.4 million tons less than the annual shipments of steel for all purposes in 1948.

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Leave industry structure as is, asks Nickerson

SPEAKING AT THE 48TH annual meeting of the National Petroleum Association, Washington, D. C., held September 13 to 15 at the Hotel Traymore, Atlantic City, A. L. Nickerson, director in charge of domestic marketing, Socony-Vacuum Oil Co., declared the present corporate structure of the oil industry, with integrated and independent companies, must be maintained. He pointed out that the nation's oil men are plagued with "irresponsible suits" and that they must fight them and at the same time continue their program of establishing public confidence and understanding of their operations.

Tracing the history of attacks against the oil industry's structure, Mr. Nickerson said the record shows plainly that supplies, quality and value of petroleum products have risen steadily through the years. He attributed the attacks to: (1) The industry has not brought its arguments or achievements sufficiently into public consciousness; (2) The value of such attacks as political and bureaucratic expediency and (3) The confusion of laws governing business today.

As an example of this confusion, Mr. Nickerson cited the recent suit wherein the Federal Trade Commission sued Standard Oil Co. (Indiana) for not having a resale price maintenance policy and the suit in which the Department of Justice brought anti-trust action against a number of West Coast oil companies for having such a policy.

If the present corporate structure is altered, if integrated companies are broken up, continued Mr. Nickerson, costs and therefore prices would be raised all along the line, product quality would fall or remain static and the flow of products to the consumer would be irregular, largely, because various operations could not be coordinated as they must be. If integration were bad, he said, the smaller and non-integrated companies would diminish in number, but, on the contrary, the number of producing companies increased from 10,900 in 1939 to 16,900 in 1949 and the number of petroleum jobbers rose from 11,000 to 13,000 in the same period.

About monopoly charges he commented: "The shift of marketing strength of companies large and small over the past 20 years indicates struggle for business, and some win in this business and others lose. Adherents of monopoly would not want to lose, and if monopoly existed, would not lose."

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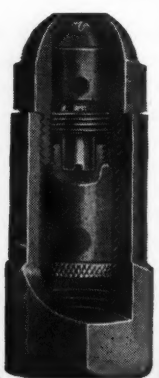

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Early approval seen for New England Pipelines

EARLY APPROVAL OF ONE of the applications for construction of natural gas pipelines in New England is foreseen, according to a bulletin recently issued by the Oil-Heat Institute of New England, Boston. Political pressure being brought to bear upon the Federal Power Commission, the bulletin declares, indicates that an early decision will be made in the matter of the petitions of the Northeastern Gas Transmission Co. and the Algonquin Gas Transmission Co.

It appears likely that the FPC will give approval soon to the application of the former company. When this is done, the 105 miles of pipe required for the

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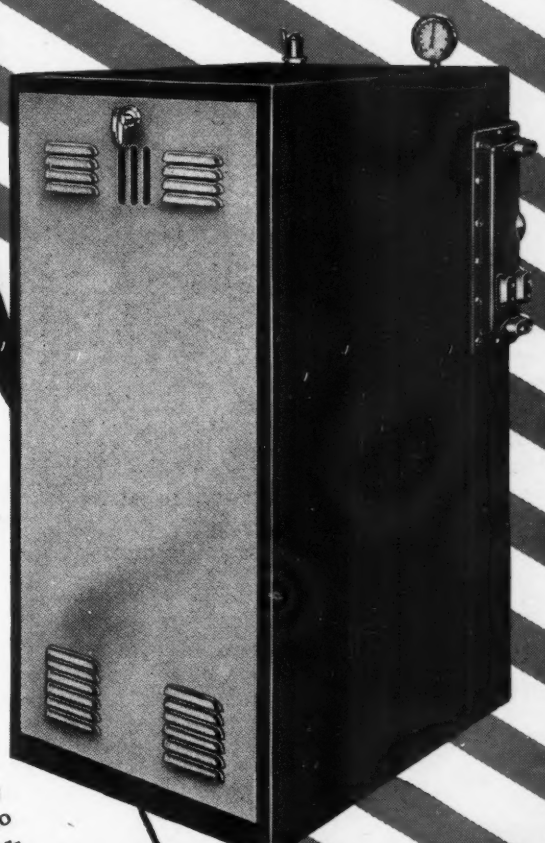

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Greenwich, Conn.-Springfield, Mass. line will be completed this winter, according to reports, since the necessary pipe and equipment for installing the line either are on hand or will be delivered during September.

Fred N. Beckwith, executive secretary, Oil-Heat Institute of New England, concludes that the members of the industry must prepare a vigorous campaign to meet this threat. As part of a program to do so, the Institute will sponsor a series of industry meetings this fall in those areas which will be affected first by the introduction of natural gas. The meetings will be aimed at helping local dealers organize a campaign to sell the public on the advantages of oilheating, using as a foundation the Plan developed by the Oil-Heat Institute of America.

An industry luncheon on October 9 was held also by the Oil-Heat Institute of New England at the Hotel Statler to discuss "The Natural Gas Invasion into New England" and to hear a progress report from the National Association on the development of the Plan.

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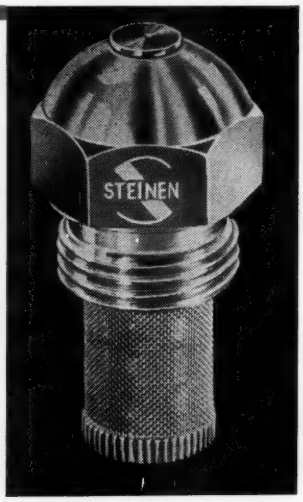

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U. S. Department of Labor Fueloil prices (July)

FIELD INVESTIGATORS for the Department of Labor monthly check prices of principal fuels in several cities in each section of the country. Getting retail quotations from various suppliers in each market, the prices are averaged and published. Those in the table that follow were taken July 15 (cents per gallon):

	Range	*No. 1*	*No. 2*	*No. 3*
Boston, Mass.	13.67	13.25	11.40	..
Manchester	14.30	13.80	12.10	..
Portland, Me.	13.40	13.40	11.30	..
[1] Baltimore	..	12.34	11.42	..
[1] Wash., D. C.	..	12.82	11.83	..
Jacksonville	..	13.67	12.18	..
Norfolk	..	12.60	11.20	11.20
Richmond	..	13.00	11.60	..
[2] Savannah	..	14.50	12.45	..
[3] Buffalo	14.44	..	12.93	12.93[9]
[1] New York	..	..	11.33	..
Philadelphia	..	12.10	11.28	..
[1] Chicago	13.81	13.46	12.55	12.55
Detroit	..	14.21	13.18	..
Milwaukee, Wis.	..	14.00	13.10	13.00
[1] Kansas City	..	12.24	11.22	11.22
Minneapolis	14.17	13.93	12.88	12.93
[6] New Orleans	..	13.82	12.36	12.36
Portland, Ore.	..	13.94	11.64	6.55
[8] San Francisco	..	13.77	11.44	6.48
[5] Seattle	..	14.77	12.65	6.74

[1] Prices include 2 per cent tax.
[2] Inspection tax of one cent per gallon included on kerosene only.
[3] Prices include 1 percent tax.
[9] Revised price for June 12.93.
[6] Prices include 3 percent tax on all fuels except gas; prices for kerosene and fuel-oil No. 1 also include one cent per gallon State health tax, and 1/32 of one cent per gallon State inspection tax.
[8] Prices include 3.5 percent tax on all fuels except gas.
[5] Prices include 3 percent tax.

Industry set for biggest Oil Progress Week

OIL PROGRESS WEEK, October 15 to 21, will be the biggest and most successful public relations program the industry has attempted, according to the Oil Industry Information Committee. Advance reports indicate that during the Week thousands of oil companies and hundreds of thousands of oil workers will participate in luncheon and dinner meetings, open houses, radio broadcasts and other special activities—all designed to acquaint the public with the achievements of the oil industry.

The OIIC already has distributed 8,000 kits for use during the observance of the Week, containing materials to help local committeemen organize their programs. Included are suggestions for speeches, radio scripts, newspaper fea-

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tures and editorials, suggestions for local special events and a souvenir booklet. Distribution is being handled by OIIC's twelve district offices and through the Western Oil & Gas Association, which is taking care of the far western states.

Five pattern speeches, four 15 to 20 minutes long and the fifth a 5-minute talk, are included in the speech section of the kit. Nine radio scripts, a clip sheet of feature stories, three editorials, a mayor's proclamation, background memorandum for newspaper and radio editors and 18 suggestions for local events comprise the press-radio-television jacket. Twenty-five tie-in advertisements, free mats and a "Go Ahead with Oil" booklet and "Hand in Hand" folder also are included. Samples of display material and descriptions of the new Petroleum Research exhibit and "24 Hours of Progress," a motion picture, complete the contents of the kit.

An additional memorandum, relating the story of oil's role in the war and in national defense has been prepared, the Committee reports.

Announce plans for independent Pipeline

PAUL RYAN AND E. HOLLEY POE, with offices in New York City, are the principal officers in the United States Pipe Line Co. The company will construct, own and operate its product pipeline system from the Texas Gulf Coast to the inland markets of the middle west, transporting gasoline, distillates, heating oils and liquefied petroleum gases. The system will extend from the Houston-Beaumont area to the St. Louis and Chicago areas, with terminal facilities en route and with extensions east from St. Louis to connect with new and existing lines.

The line will be a "common carrier," independently-owned and operated, with contracted reservations for space at low rates. Satisfactory steel supplies, the announcement says, have been arranged for with construction planned at an early date. The project, which has been under development for several years, is reported to have received approval and support from oil companies who operate Gulf refineries, who recognize it as an ideal way to transport their products to the middle west markets.

◈

Large appliance Dealers have smaller net Profit

A "COST-OF-DOING-BUSINESS" SURVEY, conducted by the National Appliance and Radio Dealers Association, indicates that participating dealers sold less and made less in 1949 than during previous years. At the same time, a decrease in the cost of goods sold contributed to a better ratio of profits to net sales.

An overall drop of 4% was noted in dollar sales volume and a 31% drop in dollar profits, the first time during the four years that the survey has been conducted that sales did not jump above the previous year's figure. Only 38% of the dealers reported sales increases in 1949, compared with 66% in 1948, with net dollar profit reported by 87% last year, 86% in 1948.

While smaller dealers had the largest declines in sales and profits, a tabulation of operating ratios largely shows that the larger the size of the dealer the higher is his operating cost and the smaller his percent of net profit. For ex-

DISTRIBUTORS AND DEALERS WANTED

Additional representation sought in New England, Midwest, and South for nations #1 manufacturer of Rotary Burners and Steam Generators. Rearranged territories on the famous York Power Rotary Burners and Steam Pak Generators makes possible our present offering of several choice locations in New England, the Midwest, and the South. If your firm is qualified to furnish alert, progressive coverage of the territory you serve, together with engineering, service and installation facilities for industrial and commercial heating and process work, this franchise will be of great interest to you.

The unusual length of the product line, together with York-Power's outstanding product reputation offers great profit possibilities.

FOR DETAILED INFORMATION PLEASE WRITE DIRECTLY TO:

MR. GEORGE FRANK, *Manager*

INDUSTRIAL DIVISION

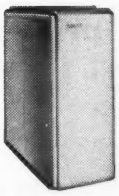
YORK-SHIPLEY, INC. • **YORK, PENNA.**

is WHY Luxaire® is the TREND·SETTER in MODERN HEATING EQUIPMENT

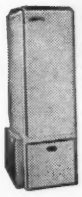
Available for all types of fuel—GAS . . . OIL . . . COAL

Luxaire units are built with Steel heating elements— Cast Iron heating elements— Luxaire has them both!

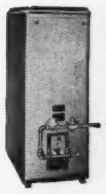
For Perimeter Heating as well as conventional installations.



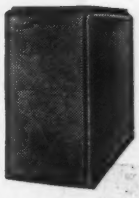
Series A Gas-Fired Steel Air Conditioning Unit.



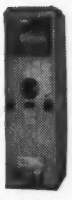
Series H Gas-Fired, Steel Utility Air Conditioning Unit.



Series G Gas-Fired Gravity Furnace Available with Steel or Cast Iron heating element.

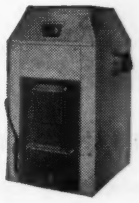


Series O Gun, Oil-Fired Air Conditioning Unit. Steel heating element.

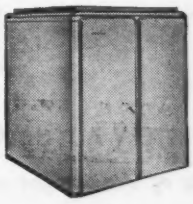


No. VHC-75-E Oil, Counterflow Unit, for Slab Floor, Perimeter heating.

No. HC-95-E Gas, Counterflow Unit, for Slab Floor, Perimeter heating.



Series C Coal-Fired, Cast Iron, Furnace.



Series CA Gas Fired Air Conditioning Unit with cast iron Heating Element.

THE Luxaire C. A. OLSEN MANUFACTURING COMPANY • • ELYRIA, OHIO

HEATING & AIR CONDITIONING UNITS

fueloil & oil heat

ample, total operating costs for dealers with sales from $75,000 to $150,000, $150,000 to $250,000 and more than $250,000 totaled 28.8%, 28.3%, and 27.0%, respectively, while dealers with sales of less than $75,000 reported their total operating costs at 24.8% of net sales. The smaller dealer also indicated a larger percentage of gross margin, 37.4%, compared with gross margins of 35.8%, 32.3%, and 31.3% for the larger groups, in the same order.

Costs of goods sold were 68.7% of the net sales last year for the appliance dealer with the largest sales and only 62.2% for the smallest. Net operating profits for the four classes of dealers covered in this study, starting with the smallest, represented 12.6%, 7.0%, 4.0%, and 4.3% of net sales, compared with a 5.2% national average.

Copies of the survey are available from NARDA, Merchandise Mart, Chicago, at a cost of $1.00 each.

There follows a tabulation of 1949 operating ratios, showing national averages and percentages separated by the dollar volume of reporting dealers.

1949 Operating Ratios by Dealer Size Groups

ITEM	Nat'l. Avg.	DEALERS WITH SALES OF — Less than $75 M	$75 M to $150 M	$150 M to $250 M	More than $250 M
Cost of Goods Sold*	67.2%	62.2%	64.2%	67.7%	68.7%
Gross Margin (Net Sales less Cost of Goods Sold)	32.8	37.4	35.8	32.3	31.3
Total Operating Costs	27.6	24.8	28.8	28.3	27.0
Administrative (Total)	19.1	17.1	18.8	20.1	18.8
Owners'-Mgrs. Pay	3.5	6.2	3.4	3.9	3.1
Office Salaries	2.0	1.3	2.7	2.1	1.8
Salesmen's Pay	5.5	2.5	4.0	5.6	6.2
Serv. Men's Pay, Exp.	4.7	4.9	5.5	4.6	4.4
Delivery Expense	1.7	1.2	2.2	1.8	1.5
Other Admin. Exp.	1.7	1.0	1.0	2.1	1.8
Occupancy Expense	2.6	2.6	3.1	3.1	2.3
Advertising Expense	2.5	2.2	3.2	2.5	2.2
Bad Debt Losses	0.2	0.3	0.3	0.1	0.3
All Other Expenses	3.2	2.6	3.4	2.5	3.4
Net Operating Profit (Gross Margin less Total Operating Costs)	5.2	12.6	7.0	4.0	4.3

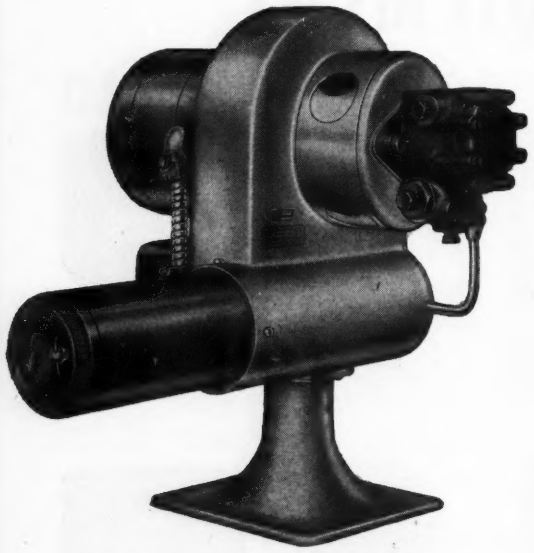
*Includes cost of service parts and supplies.

Essential Activities Committee for Manpower

SECRETARY OF COMMERCE Charles Sawyer has named H. B. McCoy as his representative on the joint Committee on Essential Activities and Critical Occupations, and Secretary of Labor Maurice J. Tobin has appointed Arthur W. Motley as his representative.

Mr. McCoy is the director of the office of Industry and Commerce of the Commerce Dept.; Mr. Motley, the assistant director in charge of the U. S. Employment Service, Labor Department's Bureau of Employment Security.

The duty of the committee will be to keep under constant review the lists of essential activities and critical occupations which were issued last August 3 and to advise the two Secretaries about necessary changes. Also, it will study and make recommendations for revisions and



Announcing a **NEW** *Johnson Burner in the* **low-price field...**

The **ECONOMAT**

Now for the first time, the makers of world famous Johnson Oil Burners have entered the lower price field with an automatic pressure-type burner which outperforms many heating units that cost twice as much.

With this super-efficient new unit you can meet virtually any price competition. In the Economat you have a burner that offers every good feature of modern burner design: automatic controls, high efficiency, fuel economy, streamlined modelling . . . all this plus the prestige of one of the oldest names in the oil-burner industry.

The Economat operates on low priced oils as heavy as CS 12-48 No. 2 or "Pacific Coast Specif. No. 200" at firing rates ranging from .75 g.p.h. to 2.25 g.p.h. It burns with a "soft" flame that is quiet, clean and complete . . . and exceptionally economical.

If you're faced with "price competition headaches" it will pay you to investigate the Economat quickly. See your nearest Johnson dealer or write to us direct.

COMPLETELY AUTOMATIC! SAFE! DEPENDABLE!

Plenty of Power for any ordinary sized home!

EASY TO SELL!
EASY TO INSTALL!
EASY TO SERVICE!

Johnson Oil Burners

S. T. JOHNSON CO.
940 Arlington Ave., Oakland 8, Calif.
401 No. Broad St., Philadelphia 8, Pa.

Builders of fine Oil Burner Equipment since 1903

The 'Yellow Pages' help you reach out for new prospects...

Right in your neighborhood there are probably plenty of folks who could easily become steady customers for the branded products and services you offer. But first you've got to tell them *how* you can serve them...as well as *where* you're located.

One sure way to call their attention to your business is through the familiar 'yellow pages' of the telephone directory. Remember, 9 out of 10 shoppers look in the 'yellow pages' when they're ready to buy.

The 'yellow pages' put your name, address and telephone number and sales messages right in the homes of prospective customers in your neighborhood. You'll find them an effective and profitable way to "reach out" for more business.

Call your local telephone business office for further information.

modifications needed to assure that the two lists meet the requirements of national defense as well as the needs of the civilian economy.

Officials of other departments and agencies have been assigned to serve as advisors on the committee as follows: Edward J. Overby, assistant to the Secretary of Agriculture; Vernon D. Northrop, administrative assistant secretary, Dept. of Interior; Albert T. Kay, chief, Manpower Division, Office of Manpower Munitions Board, Dept. of Defense; Col. Percival S. Moses, special assistant to the director, Selective Service System. J. Dewey Coates of the Labor Department's Bureau of Employment Security has been named Committee secretary.

◈

August construction up 3% to all-time monthly High

TOTAL VALUE OF NEW construction put in place during August set a new all-time monthly record exceeding $2.7 billion, private construction being valued at $2 billion, public construction at $718 million, moderately above July levels.

The figures, released by the Construction Div., U. S. Dept. of Commerce and the U. S. Labor Department's Bureau of Labor Statistics, reported the value of private residential construction placed in August at an estimated $1¼ billion, accounting for more than 3/5's of total private outlays for new construction and 60% above last August. Public housing expenditures rose to $27 million after a dip in July and industrial building continued its recent gains. Highway construction advanced by 11% to $300 million in August, with expenditures for most other types of public works levelled off at seasonal peaks.

One-fifth more new construction was put in place during the first 8-months of 1950 than in the same period last year; private outlays were ¼ larger, with most of the increase attributable to the record volume of homebuilding; public expenditures for new construction were 9% higher than last year.

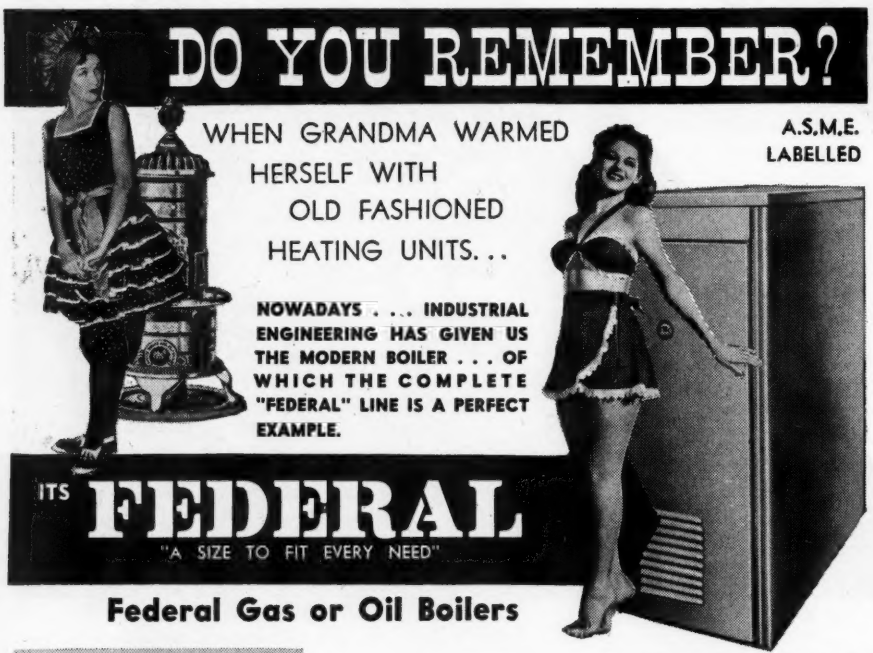
◈

Mrs. K. E. DeRosay, wife of the national fueloil manager, Sun Oil Co., Philadelphia, Pa., was killed instantly in a motor accident on September 8.

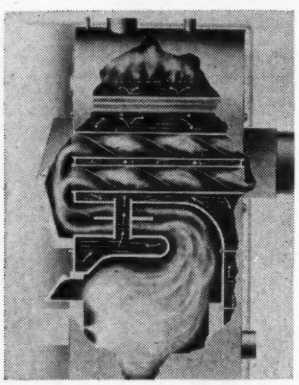
Stephen F. Keating, director of military contracts, Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., has been elected an assistant secretary. He joined the company in 1948 as executive assistant in the Aeronautical division.

C. Eustace Dwyer, The Autocar Sales and Service Co., subsidiary of The Autocar Co., Ardmore, Pa., died August 10 at his home in South Orange, N. J., at the age of 61, after an illness of more than a year. Mr. Dwyer was in charge of Autocar's National Accounts Division, with headquarters at the New York City branch. He is survived by his wife, two daughters and a brother.

HUGERT MFG. CO., Medina, Ohio has prepared a catalog on its line of gravity air conditioning fittings and pipe. The pocket-size booklet contains listings of the complete range of fittings available, dimensions, illustrations of parts and price data. The inside back cover lists approximate shipping weights for various sizes and types of fittings.


DO YOU REMEMBER?
WHEN GRANDMA WARMED HERSELF WITH OLD FASHIONED HEATING UNITS...
A.S.M.E. LABELLED
NOWADAYS . . . INDUSTRIAL ENGINEERING HAS GIVEN US THE MODERN BOILER . . . OF WHICH THE COMPLETE "FEDERAL" LINE IS A PERFECT EXAMPLE.
ITS FEDERAL
"A SIZE TO FIT EVERY NEED"

Federal Gas or Oil Boilers



- ***EFFICIENT*** . . . Federal Boilers are factory tested under abnormally high hydrostatic pressure. This and many other rigid tests assure its ability to withstand hard use and give years of perfect service.
- ***ACCESSIBLE*** . . . Federal Boilers are designed to allow quick, easy servicing of internal and external parts. No more back-breaking, time consuming cleaning and repairs.
- ***ATTRACTIVE*** . . . Two-tone, baked enamel, hammertone finished jacket. Installed after all piping has been completed. Built of sturdy, heavy gauge sheet steel and insulated.
- ***DURABLE*** . . . Federal Boilers are precision engineered to last a lifetime. Rugged construction and quality raw materials guarantee a trouble-free installation.

Model #FVW For small low cost homes radiant heat, hot water or steam. 66,000 to 96,000 net B.T.U. output.

Model #FC Oil or gas fired unit ideal for use with hot water heating systems, radiant heat or steam. 77,000 to 312,000 net B.T.U. output.

Model #FD Ideally suited for launderettes and commercials. A stoker, oil and gas fired unit. 360,000 to 528,000 net B.T.U. output.

National Distributors of:
Taco
B&G
"TACO" and "BELL & GOSSET" equipment

EASY TO INSTALL . . COMPACT . . LOW PRICE

CONSULT YOUR JOBBER FOR PRICES NOW! *WRITE FOR FREE CATALOG*

FEDERAL BOILER CO., INC.
GRANITE & WEST STS., MIDLAND PARK, N. J.

FEDERAL BOILER CO., INC., General Offices
2610 E. Tremont Ave., Bronx 61, N. Y.
Please send me free bulletins.
Name.....
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Save call backs with TACO TEMPERING VALVES because they

S-T-R-E-T-C-H
TANKLESS HEATER PERFORMANCE

GUARD AGAINST EXCESSIVELY HOT WATER

Install Taco Tempering Valves to avoid complaints of "the water's too hot" or "the tankless heater doesn't give enough hot water." You also prevent high temperature water in dishwashers from baking food on dishes.

Minimum Service Problems

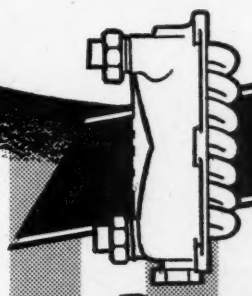
Over an 11 year period less than 3/10ths of 1% of Taco Tempering Valves sold have been returned for all reasons.

You Also Get These Exclusive Features

Two unions. Hermetically sealed element that will not tire, fatigue or corrode, and that successfully avoids the use of bimetal, bellows or volatile liquids. One piece element easily replaced in minutes. Biltin check valve for equalizing pressure.

SEND FOR CATALOG

New 60 page catalog has special design section on Panel Heating, Snow Removal and forced hot water.



Taco

TACO HEATERS, Incorporated
137 South St., Providence 3, R. I.

Better Heating-Better with Taco

Seattle homes are more than half oilheated

RESULTS OF THE 1950 CONSUMER Analysis of the Greater Seattle Market, made by *The Seattle Times,* show that 56.1% or 98,577 of all dwelling units in the area are oilheated. This compares with 53% or 93,267 last year. Oilheated installations in the area, are divided among 55.7% of 1-family homes, 27.3% of 2-family homes, 26.1% of 3 and 4 dwelling units, 76.6% among structures with 5 or more dwelling units and 39.1% among all other dwelling units. Oil space heaters are used in 18.6%, or 32,647, of Seattle homes, compared with 18.2%, or 31,952, last year.

Coal furnaces are second in popularity, used in 7.7% or 13,538 units this year, 9% or 15,816 last year; stoker coal furnaces are third, reported in 6% or 10,542 units in 1950, 6.9% or 12,057 last year. Gas furnaces were found in 4,442, or 2.5% of the dwelling units this year, 5,036 or 2.9% last year. Wood furnaces are used in 1.9% of the centrally installed heating systems.

Dwelling Units by Type of Heating Equipment, 1949 and 1950

TYPE OF HEATING UNIT	PERCENT 1950	PERCENT 1949	NUMBER 1950	NUMBER 1949
Oil furnace	56.1%	53.0%	98,577	93,267
Conventional coal furnace	7.7	9.0	13,538	15,816
Stoker coal furnace	6.0	6.9	10,542	12,057
Gas furnace	2.5	2.9	4,442	5,036
Wood furnace	1.9	2.3	3,385	4,043
Oil space heater	18.6	18.2	32,647	31,952
Coal space heater	4.7	5.5	8,250	9,681
Gas space heater	0.8	0.5	1,446	958
Electric space heater	1.3	1.4	2,327	2,518
Other	0.4	0.3	635	461

Installations by the Type of Dwelling Unit

TYPE OF HEATING UNIT	TYPE OF DWELLING UNIT: 1 Dwelling Unit	2 Dwelling Unit	3-4 Dwelling Unit	1-4 Dwelling Unit	5 or more Dwelling Unit	Other
Oil furnace	55.7%	27.3%	26.1%	41.6%	76.6%	39.1%
Convention coal furnace	8.7	11.2	9.5	2.8	3.0	0.0
Stoker coal furnace	7.2	5.2	5.7	2.8	2.6	0.0
Gas furnace	2.9	2.4	3.0	2.8	1.4	0.0
Wood furnace	2.2	1.4	1.9	0.0	1.2	0.0
Oil space heater	18.3	43.2	31.1	25.0	6.6	39.1
Coal space heater	2.8	6.8	17.4	2.8	7.1	0.0
Gas space heater	0.3	1.4	3.8	16.6	1.0	4.4
Electric space heater	1.5	0.8	1.1	5.6	0.4	13.0
Other	0.4	0.3	0.4	0.0	0.1	4.4

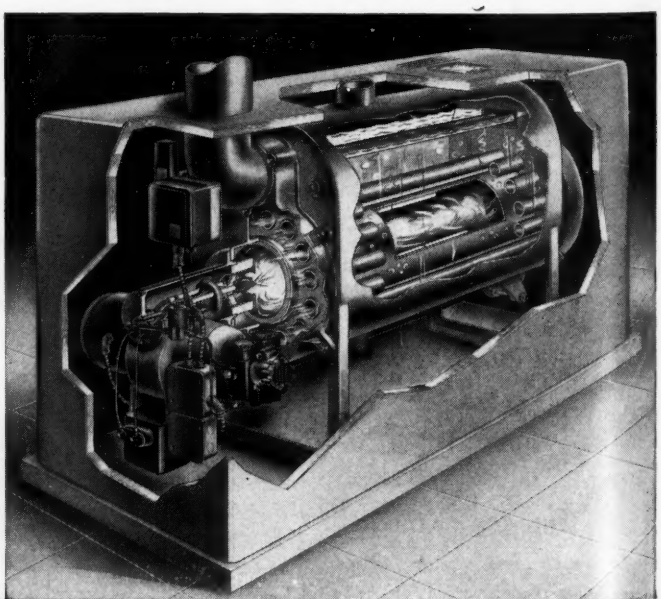
DONGAN ELECTRIC MFG. CO., Detroit 7, Mich., has prepared an 8-page booklet on its line of ignition transformers for gas and oilburners. The first two inside pages of the booklet describe the construction of the units, highlighted by the features that are built-in and the quality of the materials used. Other pages contain complete specifications and dimensions for the models available, accompanied by photographs and dimensional drawings.

The Bethlehem Crusade-a-therm

You're SURE it's QUALITY! You're SURE it's PROFITABLE!

Two world-famous products in one—that's the Bethlehem Crusade-a-therm. In a compact, efficient and handsome unit are the Bethlehem Boiler and the Crusader Burner, the acknowledged leaders in their fields. Crusade-a-therm replaces old-fashioned furnaces and hot water systems with a modern, low-cost, proven unit of unsurpassed efficiency. Crusade-a-therm alone has the C-liminator, the electrical delay switch that does away with oil smoke on starts. Crusade-a-therm is the answer to today's heating and hot water problems.

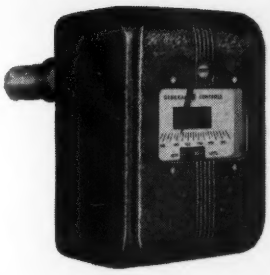
From the standpoint of appearance, the Bethlehem Crusade-a-therm leaves nothing to be desired. Designed to occupy a minimum of space, it will add real beauty to any basement or recreation room.



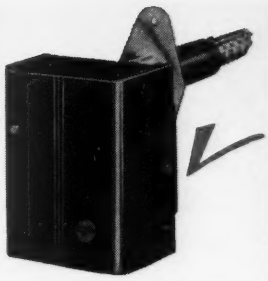
Crusade-a-therm
is a *"Natural"* for Sales and Profits!

BETHLEHEM FOUNDRY & MACHINE COMPANY
BETHLEHEM, PENNSYLVANIA

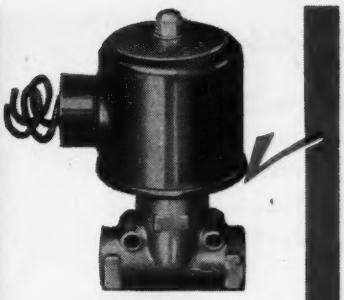
A few exclusive Bethlehem Crusade-a-therm territory Franchises are still available. Wire or write immediately for full information.



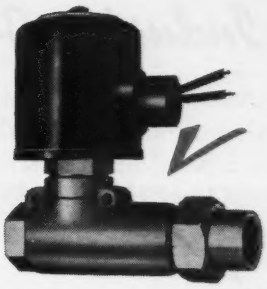
L-32 Immersion Thermostat



R-99 Stack Switch

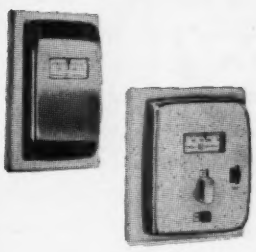


K-21 Magnetic Single Seated Valves



K-10 Magnetic Lever Valve

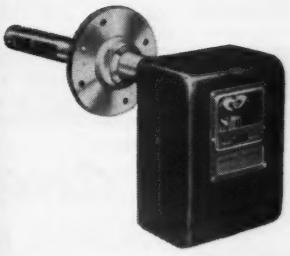
for better HEAT CONTROL check GENERAL CONTROLS



T-70 Standard and T-70T Timer Thermostats

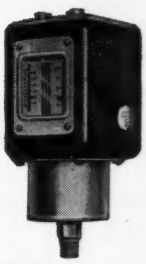
Whatever the *control* problem . . . whether it's *product* control . . . or *process* control . . . in any application where a higher level of operating performance is the goal . . . *automatic* controls more often than not form the solution . . . and in the field of automatic controls . . . there's certain to be a General Control that can be relied upon to do a better job. That's why more and more of the leaders in American Industry are joining in the big swing to General Controls . . . that's why there are so many new voices in the rising chant that,

"for the best in automatic control, it's General Controls."

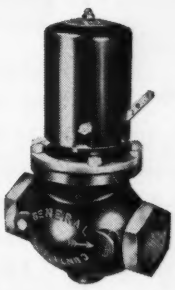


L-34 Combination Fan and Limit Control

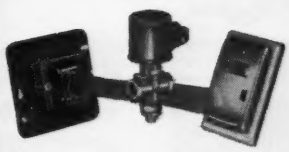
L-27 Low Water Cut-Off Valve, Gauge Glass Mounting Type



L-58 Pressure Controls



Hydramotor G-1-7



T-23 Package Set

Controls for Gravity, Gun, Rotary and Atomizing Oil Burner Applications

GENERAL CONTROLS

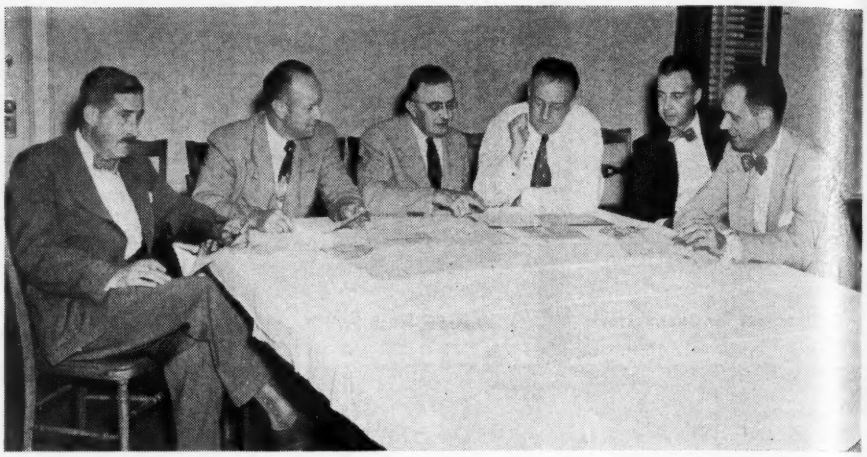
801 Allen Avenue **Glendale 1, California**

Manufacturers of Automatic Pressure, Temperature, Level and Flow Controls

FACTORY BRANCHES: Baltimore 5, Birmingham 3, Boston 16, Buffalo 3, Chicago 5, Cincinnati 2, Cleveland 15, Dallas 1, Denver 4, Detroit 21, Glendale 1, Houston 6, Kansas City 2, Minneapolis 2, Newark 6, New York 17, Philadelphia 23, Pittsburgh 22, St. Louis 12, San Francisco 7, Seattle 1, Tulsa 6. DISTRIBUTORS IN PRINCIPAL CITIES

Industry Groups

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Groups' activities to reach the editor by the 18th.



The Advertising Committee *of the Oil Heat Association of Maryland, Baltimore 1, Md., which is mapping an aggressive local campaign selling the advantages of oil heat. Shown, from left to right are: Ferd Myers, president, Yeaton & Co. and Baltimore Coal Exchange; Warren A. Miller, district sales manager, Heating Div., Esso Standard Oil Co.; Thomas E. Carson, co-chairman of the committee and manager, Heating Div., Sherwood Bros.; J. Hollis B. Albert, president of the Association and president of Operators Heat, Inc.; Robert E. Michel, president, R. E. Michel Co.; Stephen C. Hess, manager, Heating Div., C. Hoffberger Co.*

IBR issues revised Edition Of cast-iron boiler Ratings

A REVISED EDITION of "IBR Ratings for Cast-Iron Boilers" has been published by the Institute of Boiler and Radiator Manufacturers, containing up-to-date IBR ratings for all cast-iron boilers being produced currently.

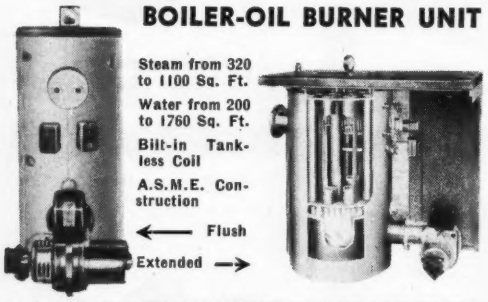
Changes made in these ratings are based on research work at the University of Illinois, which indicated that piping and pick-up factors used in the IBR Boiler Rating Code since 1940 have been too conservative as applied to automatically-fired hot water heating systems. The research indicated reduction from 1.53 to 1.33 as the maximum factor.

One of the effects of the new ratings will be the use of a smaller boiler, in many cases, with a corresponding lower installation cost for automatically-fired hot water heating systems. Much of the work sponsored by IBR at the University has been directed toward this objective. M. W. McRae, chairman of the Institute's Boiler Technical Committee, points out that the only effect a lower pick-up will have "is to slightly extend the time period for picking up the load.

Delta-America's Best Buy in AUTOMATIC HEATING

and Your Best Buy too!

BOILER-OIL BURNER UNIT



Steam from 320 to 1100 Sq. Ft.
Water from 200 to 1760 Sq. Ft.
Bilt-in Tankless Coil
A.S.M.E. Construction
← Flush
Extended →

Equipped with NEW MAGNESIUM ANODE "LIFE" ROD —protects boilers against corrosion

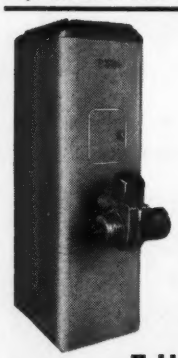
CONVERSION OIL BURNER

Available from ¾ to 16 GPH

OIL-FIRED FLOOR FURNACE

FORCED DRAFT BLOWER

- Fully wired and assembled
- Floor area only 2' x 2'
- 50,000 BTU Commercial Standards
- Smokeless-Sootless Burner



FORCED WARM-AIR OIL UNIT

- Flange-mounted oil burner
- Durable—Efficient twin-heat exchanger
- Pre-cast Bilt-in combustion chamber
- Output 90,000 BTU's
- Large blower
- Factory assembled

THE DELTA LINE IS SOLD THROUGH LEADING JOBBERS

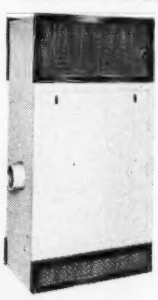
From Coast to Coast

•

Send for FULL DETAILS Today!

DELTA DUAL-WALL FURNACE

WITH CIRCULATING BLOWER FAN



- Thermostat controlled
- All parts easily accessible for servicing
- Output 52,000 BTU's
- Factory assembled

THE LINE THAT'S *BUILT RIGHT AND PRICED RIGHT!*

DELTA HEATING CORPORATION 85-07 NORTHERN BLVD., JACKSON HEIGHTS, N.Y.

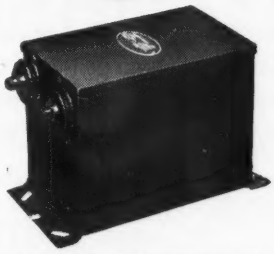
New G-E control provides "double-check" protection against:

PILOT FAILURE **FLAME FAILURE**
POWER FAILURE **CARBONIZING**
COLD-OIL STARTING

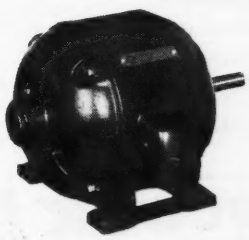
COMPLETE OIL-BURNER PROTECTION . . . that's what you get when you specify General Electric's new photoelectric combustion control. It's a complete, coordinated system including master control unit, phototube holder and electrode holder. Assures positive protection against combustion failure by immediate fuel cut-off. All components of the system are easily removable for inspection and test without disturbing connections. Write for Bulletin GEA-4779: "Electronic Combustion Control for Commercial Oil Burners."

Development of this device is yet another proof that General Electric keeps abreast of commercial-burner needs with dependable electric equipment—including ignition transformers, motors and control. When you order oil burners, ask for complete electric equipment by General Electric. *Apparatus Dept., General Electric Company, Schenectady 5, New York.*

EQUIPMENT FOR COMMERCIAL BURNERS



IGNITION TRANSFORMERS



MOTORS

CONTROL

GENERAL ELECTRIC

730-19

The overall operating efficiency will be improved."

Copies of the revised ratings may be secured from the Institute, 60 East 42nd St., New York 17, at 50¢ each.

OHI of New England Luncheon Considers natural Gas Invasion

"THE NATURAL GAS INVASION into New England" was the theme of an industry luncheon held October 9 at the Hotel Statler, Boston, by the Oil-Heat Institute of New England. Elmer Wheeler, of "Don't sell the steak, sell the sizzle" fame, was a speaker at the luncheon, which also heard a progress report on the plan being developed by the Oil-Heat Institute of America to combat natural gas competition.

The New England group plans also to hold a series of regional meetings this Fall to bolster local campaigns by dealers in those areas which will be affected first by the introduction of natural gas. The Institute expects early approval by the Federal Power Commission of one of two applications for permission to run natural gas pipelines into New England, with the possibility that construction will be completed this winter.

Emblem *of the "Heat with oil" campaign of the Northwest Petroleum Association, Minneapolis 2, Minn. Cuts are available in three sizes for members and non-members to use on letterheads, circulars, newspaper advertisements and similar promotion.*

Chicago Oil Men's Club Entertains at fall golf Party

SEPTEMBER 19 was the date of the fall golf party, sponsored by the Chicago Oil Men's Club, Chicago 11, Ill. Held at the Midlothian Country Club, just west of Cicero, Ill., the outing featured steak dinners and a galaxy of prizes for golfers and non-golfers. Edwin J. Freeman, chairman of the entertainment committee, supervised arrangements.

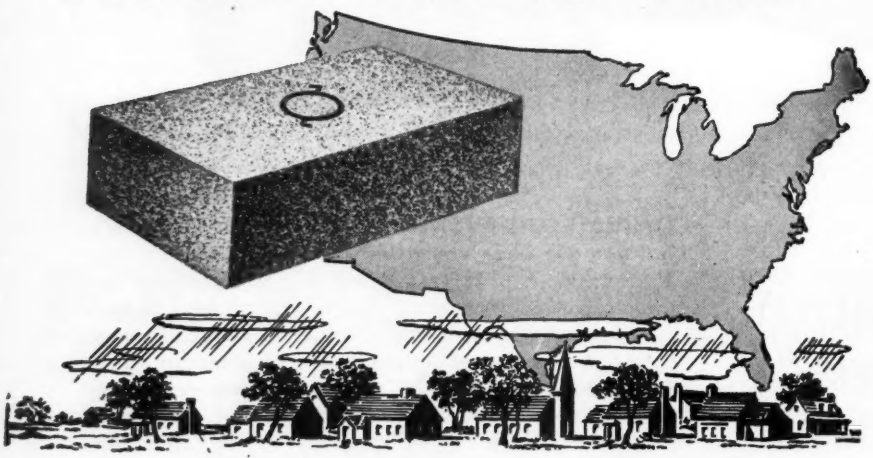
Terminal Operators hear Talk on fueloil Outlook

A SEPTEMBER 20 meeting of the Long Island Terminal Operators Association was held at Stewart Manor Country Club, Stewart Manor, N. Y. and attracted a turnout of about fifty. Speaker at the luncheon meeting was Robert Gray, editor, FUELOIL & OIL HEAT, who discussed several phases of the short and long range fueloil outlook in his talk entitled, "Looking Down the Road."

Rosebroughs honored at St. Louis ASHVE Meeting

"ROSEBROUGH NIGHT" was celebrated recently at a St. Louis chapter meeting of the American Society of Heating and Ventilating Engineers. R. M. Rosebrough, central district sales manager,

Let "A Quarter of a Million Families" Be Your Guide

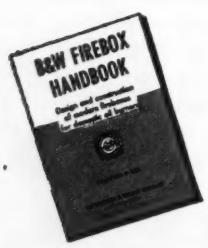


Yes, more than a quarter million families are getting oil heating comfort at a much lower cost because wide-awake and alert dealers have provided them with B&W Fireboxes.

This figure carries a vital sales message for you. It shows that dealers and customers all over the country recognize the advantages of B&W Insulating Firebrick. It proves that they are "sold" on the Fireboxes that —

1. **Save fuel, due to more efficient insulation.**
2. **Minimize odor, soot and smoke.**
3. **Assure smoother, quieter burning.**
4. **Respond quickly to thermostat by reaching temperature quickly from a cold start.**

Follow this lead to increased sales and profits—by showing your customers the benefits of B&W Fireboxes.



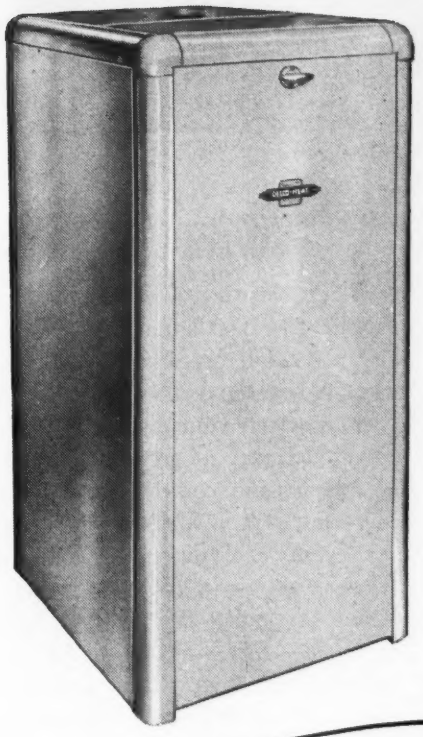
Send Today
for the B&W FIREBOX HANDBOOK
a sure guide to customer satisfaction and more sales.

R-298

B&W REFRACTORIES PRODUCTS
B&W 60 FIREBRICK • B&W JUNIOR FIREBRICK
B&W 60 GLASS TANK BLOCKS • B&W INSULATING FIREBRICK
B&W REFRACTORY CASTABLES, PLASTICS AND MORTARS

OTHER B&W PRODUCTS
Stationary & Marine Boilers and Component Equipment
Chemical Recovery Units . . . Seamless & Welded Tubes . . . Pulverizers
Fuel Burning Equipment . . . Pressure Vessels . . . Alloy Castings

BABCOCK & WILCOX
THE BABCOCK & WILCOX CO.
REFRACTORIES DIVISION
GENERAL OFFICES: 85 LIBERTY ST., NEW YORK 6, N.Y.
WORKS: AUGUSTA, GA.



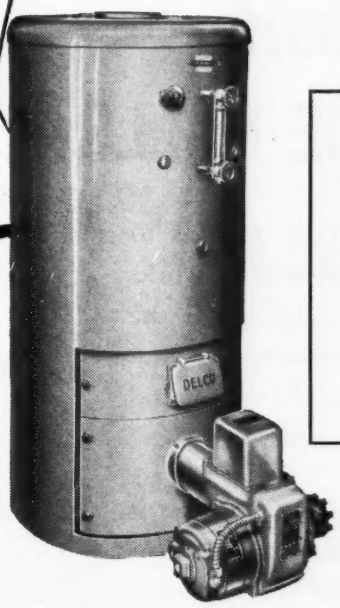
New! This "Small-Home-Size" DELCO-HEAT OIL-FIRED BOILER Packs Extra Sales Features!

The new "Series S" Delco-Heat Oil-Fired Boilers are low in first cost – yet have all the features that make them ideal for steam, hot water or radiant installations in today's popular sized homes:

- Compact! Deluxe model takes only 24" x 39" floor space.
- Beautifully finished in Delco-green enamel – harmonizes perfectly in utility and recreation rooms.
- Helical swirl plates in 12 heat tubes extract maximum heat from fuel.
- Quiet, smooth-running Delco-Heat Burner is powered by famous Delco *Rigidframe* Motor.
- Insulated with full 1" blanket of fibre glass wool.
- Comfortable, even heat doubly assured by Delco coordinated controls.
- Burner and controls are located on front of unit for easy installation in restricted areas, and to simplify servicing and adjustment.

More new heating units that prove:

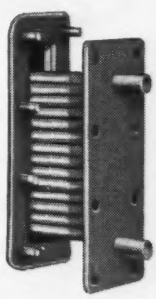
IT'S EASIER TO SELL DELCO-HEAT PRODUCTS THAN IT IS TO SELL AGAINST THEM!



Round jacket model is especially suited for installation in closets or wherever space is limited. Performance specifications identical with Deluxe model.

Domestic Hot Water Service . . .

This large copper coil, built into the boiler, delivers an abundant supply of hot water for household use, all year around. Entirely automatic.



Sell the complete line of DELCO-HEAT products

Delco-Heat has automatic home heating units for every heating need. The Delco-Heat line includes oil, gas and coal-fired units . . . for warm air, steam or hot water systems . . . for all popular-sized homes.

And because of his products, their prices, and the selling assistance he gets – the Delco-Heat Retail Distributor has unmatched opportunities. If you are interested in the profit possibilities of the Delco-Heat franchise, send coupon now!

Also manufacturers of oil and gas fired water heaters and electric water systems.

GENERAL MOTORS DELCO-HEAT

clip and mail today!

DELCO APPLIANCE DIVISION, Dept. FO-10
General Motors Corporation
Rochester 1, New York

Please send me information about the Delco-Heat franchise.

Name _____

Firm Name _____

Street _____

City _____ *Zone* _____ *State* _____

fuel oil heat

L. J. Mueller Furnace Co., Milwaukee 15, Wis., and past president of the Chapter, installed his son, J. S. Rosebrough, as new president. A short time later in the meeting, the son, central district representative, L. J. Mueller Furnace Co., presented his Dad with an ASHVE life membership certificate.

Born in St. Louis, Bob Rosebrough has been in the heating industry since 1905 and joined Mueller in 1913 as manager of its St. Louis branch. He currently is celebrating his thirty-eighth year of consecutive association with the company.

Oil Industry "Report to the Nation" sponsored by IPAA

AN OIL INDUSTRY "Report to the Nation" was sponsored in St. Louis on October 3 by the Independent Petroleum Association of America, Tulsa 1, Okla. One of six speakers was Gov. Roy J. Turner, Oklahoma, chairman of the Interstate Oil Compact Commission.

Gov. Turner discussed the work of the Commission, an advisory and research organization devoted to the broad objective of oil and gas conservation.

Fulflo FILTERS
REG U.S. PAT. OFF.

STOP Costly SERVICE CALLS

The way to eliminate costly service calls is to prevent their cause. A FULFLO Filter works day and night to remove from heating oil the microscopic impurities which otherwise accumulate and cause fouled points, stuck valves and clogged orifices . . . and midnight phone calls.

The reason FULFLO Filters outsell all others is because so many dealers have learned how effectively they eliminate service calls arising from minute impurities in heating oil.

Cut your service costs with FULFLO Filters.

HONEYCOMB FILTER TUBE RF4
4-INCH REFILL WITH GASKET
Fits all 4-inch FULFLO FILTERS back to earliest original AS4 models. Available at most jobbers. Every drop filtered again and again to microscopic clarity.
ACCEPT NO SUBSTITUTES

IF YOUR JOBBER CAN'T SUPPLY YOU WRITE US.

COMMERCIAL FILTERS CORPORATION
BOSTON 27, MASSACHUSETTS

Manufacturers Activities

Sid Harvey Catalog groups Parts of all Manufacturers

A FEATURE of the 204 page catalog of repair and installation parts for automatic heating, prepared by Sid Harvey, Inc., Valley Stream, N. Y., is the manner in which similar parts of different manufacturers are grouped together for reference and comparison. Instead of showing each manufacturer's line separately, the new edition of "Sid Harvey's News" shows in the same section all parts of similar specifications that are available. For example, under "Plain thermostats, 2-wire, low voltage" are shown 17 models of 10 different manufacturers, illustrating type of contacts, range, differential, trade prices for new and rebuilt models.

Similar information is given for each of the other 4 circuits on which plain thermostats operate, along with other controls of 23 manufacturers. Each is tabulated by its junction and the circuit on which it works. Nearly all parts used on automatic heating installations, current or obsolete models, are handled in a similar fashion.

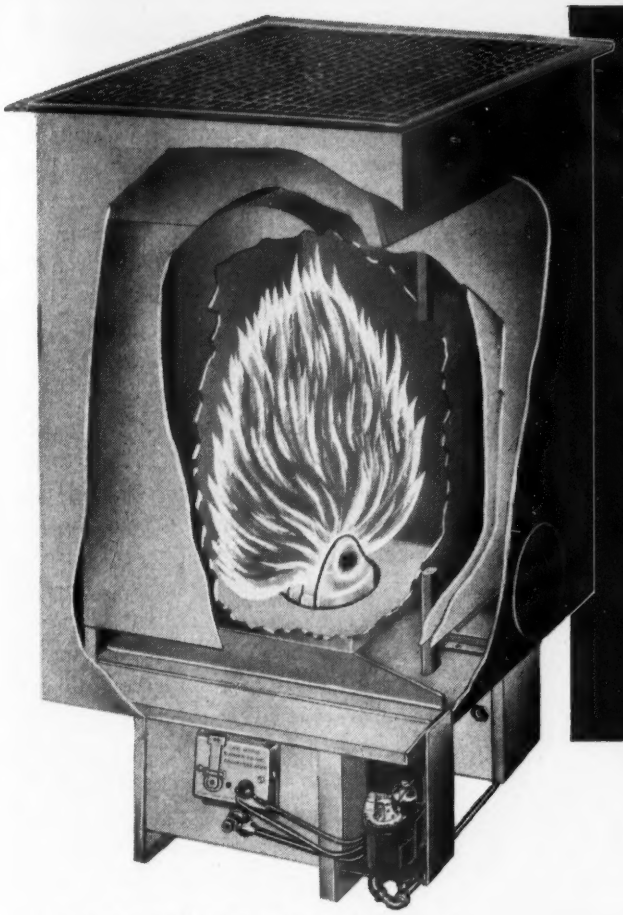
The company is distributing copies to all its customers and will send a copy to concerns in the automatic heating business who ask for it on their business letterheads.

A. B. C. licenses Canadian Manufacturer

A RECENT ANNOUNCEMENT by Automatic Burner Corp., Chicago 12, Ill., reveals the licensing of the John Wood Co., Ltd., Fess Burner Div., as exclusive manufacturer of all pressure type A. B. C. oilburners in Canada.

Three-dimensional Viewers Used by Coleman Salesmen

THE 1950 VERSION of the parlor stereoptican is being used by salesmen for the Coleman Co., Inc., Wichita, Kan., during their sales presentations. The first viewing discs, each containing seven color photographs, are on the company's Golden Anniversary oil space heaters,



STANDARD REGISTER MODELS—
50,000 BTU and 75,000 BTU

DUAL REGISTER MODELS—
55,000 BTU and 80,000 BTU.

Here are 3 reasons why it is EASY TO SELL H. C. Little oil floor furnaces!

1 H. C. LITTLE AUTOMATIC SELF LIGHTING COMMANDS ATTENTION

Your customer is sure to pay close attention to the ONLY oil floor furnace that automatically lights itself . . . that has no pilot light . . . that shuts itself off completely when heat is not needed. Your customer's *attention means sales*—and more profit for you!

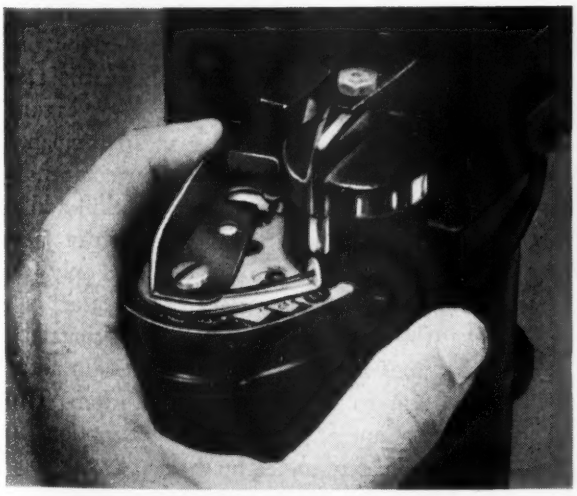
2 H. C. LITTLE FUEL SAVINGS STIMULATE INTEREST

Your customer is sure to be interested in the fact that this furnace burns low cost furnace oil (including catalytic oil) at very high efficiency. Interest mounts as you explain how the H. C. Little oil burner principle of "Progressive Low Temperature Carburetion" keeps fuel bills way down. Your customer's *increased interest means more sales*—and more profit for you!

3 H. C. LITTLE "MANUAL RESET" IS SALES CLINCHER

Your customer is sure to prefer the automatic oil floor furnace that keeps on heating, even if electric power fails! (See picture and explanation at left). Your customer's *preference* for all three H. C. Little features *means more and more sales*—more and more profit for you!

For full information write Dept. 10



Cut shows location of manual reset lever on top of automatic oil valve. For manual operation, reset lever is pushed over, raising blade on heat motor. Oil flow is then regulated by manual oil control knob. Resumption of electric power releases manual reset lever and fully automatic operation takes over.

H. C. Little Burner Company — San Rafael, Calif.

Baltimore, Md.	Columbus, Ga.	Newark, N.J.	Salt Lake City, Utah
Belmont, Mass.	Detroit Lakes, Minn.	Portland, Ore.	Seattle, Wash.
Boise, Idaho	Fayetteville, N. Car.	Prescott, Ariz.	St. Louis, Mo.
Chicago, Ill.	Des Moines, Iowa	Reno, Nev.	St. Petersburg, Fla.

with a coordinated sales story included for the salesman to tell while the prospect handles the viewer.

The viewer is made of light plastic, compact enough to fit palm of a hand. When held up to natural or artificial light surprising faithfulness of reproduction is reported.

The company expects to have a thousand stereoptican kits in use this year and is producing now or planning discs on its other heating products.

Davis Engineering Bulletins On water Heaters and Converters

PREPARED as Sections of its Bulletin 70 are three pieces of literature recently released by Davis Engineering Corp., Elizabeth 4, N. J. The largest is a 12-page booklet, section K, entitled "Paracoil Converters," dealing with units for domestic, commercial and industrial applications to supply hot water for radiation or process systems. Full dimensional data and capacity ratings are given for 88 standard sizes, capacities based on steam pressures from 0 to 25 spi gauge and for 9 temperature ranges. These include the low level ranges employed in radiant heat applications. Pressure drop data, installation diagrams, data to determine steam requirements and pipe sizes all are included.

Section C, Bulletin 70, covers condensate coolers and affords a description of the units, which also are known as preheaters or economizers. Standard specifications and a piping hook-up diagram are shown, with capacity tables.

Section I, Bulletin 70, sets forth data on 2, 4 and 6-pass design Paracoil instantaneous U-tube water heaters, and incorporates complete information on dimensions and capacities for a variety of sizes.

Gulf Oil announces Benefit Plan for Workers

AN EMPLOYEES SAVINGS PLAN, open to full-time domestic workers who have completed six months of continuous service and who earn less than $9,000 annually, has been announced by the Gulf Oil Corp., Pittsburgh, Pa. It is estimated that 30,000 employees are eligible. Under the plan, participants may save up to 7% of their compensation, to which the company will add a contribution up to a maximum of 5%. Contributions will be collected only for the last three months of this year, but the company will make special contributions for the first nine months in addition to its regular contribution. The amount of the special contributions is to be determined by the employee's contribution during the last quarter.

Under an annuity feature, the employee may put into the fund a maximum of 3% of his wages, with the company adding an amount sufficient to match the employee's contributions plus interest, upon retirement. From these amounts the employee receives a lifetime monthly retirement income, with any balance at the time of his death

There is only ONE

TRADE MARK REGISTERED

Draft-O-Stat

BAROMETRIC DRAFT CONTROL

AND HOTSTREAM MAKES IT!

OVER ONE MILLION SUCCESSFUL INSTALLATIONS

New Model "B" (illustrated) now available in 6, 7, 8, 9, 10 and 12 inch sizes. Write for Bulletin.

THE HOTSTREAM HEATER CO.

6925 QUINCY AVENUE • CLEVELAND 4, OHIO

Meet a new member of this fast-selling family...

the KO-Z-Aire 140 Winter Air Conditioner

THIS ruggedly-constructed, handsomely-finished 140 Series is KO-Z-AIRE's latest addition to the warm air heating line that's "stealing the show" with both dealers and home-owners.

For here, as in all models, KO-Z-AIRE engineers have outdone themselves to give you faster, easier sales, incorporating smart Advance Design styling into a factory-assembled, easy-to-install unit, with automatic controls, one piece, dust-leak proof welded steel base, and removable clean-out panels.

And you'll find a full range of sizes in both gas and oil-fired gravity and forced air equipment priced to sell — backed by new marketing policies which assure faster, more experienced service to distributors and dealers.

Much else goes with KO-Z-AIRE units to assure dependable, trouble-free, economical operation—minimized servicing problems. So, better not stop with looking, better send today for complete details about KO-Z-AIRE's Progressive Profit Program for dealers. Sure as sunrise, you'll be money ahead in years to come.

Gas and Oil Fired Units from 70,000 to 450,000 BTU Input Available. Some Choice Dealer and Distributor Territories Still Open . . . Write Today!

KO-Z-AIRE

KO-Z-AIRE, Inc., Dept. FO-10, GENERAL OFFICES — RED OAK, IOWA • REPRESENTATIVES IN PRINCIPAL CITIES

payable to his beneficiary or estate.

Available to the employee who takes full advantage of the annuity feature of the plan is a savings and stock bonus arrangement under which he becomes eligible to contribute up to an additional 4% of his wages to the savings fund. Employee's contributions under this plan, which is set up in a series of funds, each of which runs for 3 years with a new fund starting each year, are used to purchase U. S. Savings Bonds, Series E. The company contributes an amount equal to 50% of the total employee's contributions, with which Gulf stock is purchased and distributed as a bonus at the end of each term to those for whom Savings Bonds are held.

Funds from the plans are held and invested by the Mellon National Bank and Trust Co., under a Trust Agreement. The plan is administered by a committee of Gulf officials appointed by the board of directors, and consists of: H. A. Gidney, chairman; David Proctor, vice chairman; J. F. Drake; S. A. Swensrud; H. R. Moorhead, Jr.; W. L. Naylor and V. H. Ludwig.

Pacemaker for Profits . . . from Expert Heating Service

Making the most of your ability to do an expert tune-up job will pay you big dividends in gaining you competitive leadership and neighborhood recognition of your competence as a heating expert. The combustion-testing kit shown here contains precision-made quality instruments with which you can make fullest use of your know-how in making a fuel conservation survey, checking a burner for wornout parts and needed repairs, or running an efficiency test to close a replacement deal.

The kit contains the well-known FYRITE CO_2 Indicator, the versatile MZF Draft Gauge, the all-metal TEMPOINT Stack Thermometer and the sensationally new TRUE-SPOT Smoke Tester. Now, for the first time you can adjust an oil burner quickly and expertly for highest CO_2 without objectionable smoke . . . do away with guesswork, and "hit and miss" fumbling in adjusting for clean firing. The "Scale of Soot" which comes with the TRUE-SPOT tells you the limits of permissible smoke for various burners and types of heating systems. This amazingly simple method of oil burner adjustment is the greatest advance in combustion testing since the introduction of the FYRITE CO_2 Indicator.

Ask your Jobber for the FYRITE Utility Kit or write for Bulletin 777

BACHARACH INDUSTRIAL INSTRUMENT CO.

7000 BENNETT STREET · PITTSBURGH 8, PA.

Penn Electric holding New series of Meetings

A NEW SERIES of educational shows, sponsored by Penn Electric Switch Co., Goshen, Ind., as a service to heating engineers and service men, began in Chicago on September 11. Additional ses-

A typical group *of installers discussing control operation with R. H. Luscombe, Penn general sales manager, after a recent educational meeting.*

sions were held in Milwaukee on September 14, Madison on September 18, Oshkosh on September 21, Duluth on September 25, St. Paul-Minneapolis on September 28, LaCrosse on October 2, Peoria on October 5, Davenport on October 9, with others scheduled in Des Moines, October 16; Sioux City, October 19; Omaha, October 23; Lincoln, October 26; Wichita, October 30; Kansas City, November 2; Springfield, November 6; St. Louis, November 9; Evansville, November 13 and Indianapolis, November 16.

The current meetings are to be patterned after previous ones, but will include latest current information and service helps on control problems. Included in the equipment used are colored slides, charts and giant controls which actually operate, designed to give a visual demonstration of the use, construction and servicing of automatic controls.

Meetings in each city are being arranged and sponsored by local jobbers, with each arranged to give the most thorough demonstration possible in a single evening. After the regular session, individual installation problems will be discussed.

G-E Reorganizes Air Conditioning Sales

REORGANIZATION of its distribution sales responsibilities in the field has been an-

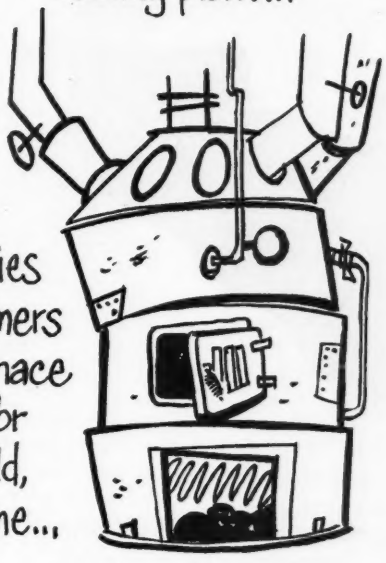
HAVE YOU HEARD? by Perf

1. that more and more people will be switching to oil heat because of conditions today...

2. that a Superfex 74 Oil Furnace costs you little more than a conversion burner...

3. that, even though your initial cost is only a little more, you gross a great deal more because you install a complete heating plant...

4. that the Superfex 74 comes fully assembled, ready for installation...



5. that this Superfex 74 has greater sales possibilities because it gives your customers a completely automatic furnace ...one designed especially for oil heat... instead of their old, cumbersome make-shift one...

6. that the "74" has terrific selling points... such as a three stage fire (pilot, coasting, boaster) for continuous, automatic comfort...

.... that by writing to

Perfection Stove Co.

7229-A Platt Ave-Cleveland 4, Ohio, you can get more information on this Superfex 74

nounced by the Air Conditioning Dept., General Electric Co., Bloomfield, N. J. Under the plan there will be established regions in New York City, Chicago, New Orleans and San Francisco, headed by a regional manager who will oversee all sales operations to franchised distributors. H. J. Wines, manager of distribution sales, will administer the new set-up from Bloomfield.

Managers for the four sales regions have been named, as follows: H. N. McMenimen in the eastern region; S. C. Bernhardt in the central region; E. J. Guillory, southern region and L. M. Larkin, western region.

Included under this arrangement are automatic heating products, packaged air conditioning and central plant air conditioning of less than 50 tons. Larger installations are to be treated as direct sales, under J. D. Hoffman, manager of direct sales.

Contest builds prospect List For Canadian heating Dealer

THE SALE of oilburners was promoted at the Canadian National Exhibition, Toronto, recently by the Heating Equipment Co., Ltd., Toronto, by a "Dig for Dough" contest. It was announced in full page newspaper advertisements, wherein the company invited interested persons to fill in a coupon and send it to its office.

The first 400 entries received were eligible to take part. All the silver coins which each participant was able to draw from a money bowl set up at the company's exhibit were credited to that person's account toward the purchase of an oilburner. The company was able to build up a valuable prospect list from those who visited the exhibit and also from those who filled in the coupons only.

Keep ALL the Profits
on your next warm-air job!

● You're *giving away* profits whenever you "farm-out" the ductwork on your furnace installations. You can easily handle the complete job yourself with "Snap-Rite" prefabricated ducts and fittings. You don't need a sheet-metal shop or special equipment—the patented quick-locking feature of "Snap-Rite" ducts and fittings makes them easy to assemble.

Shown above is our most popular and simplified No. 160 line which consists of a square main trunk with round branch lines. This is accomplished through the use of our standard stock trunk pipe with "pre-notch" feature and our No. 160 round branch takeoff as illustrated, effecting a reduction in size of main trunk at each branch. This method produces a neat air-tight installation, low in cost and easy to balance.

Write for our catalog now and keep ALL the profits on your NEXT job!

GRAY METAL PRODUCTS, INC.

P. O. Box 1449 **Rochester, N. Y.**

Renick & Mahoney Outlet Opens new Office and Building

SEVERAL HUNDRED guests attended an open house on September 16 to dedicate the new office and building of George A. Chivvis Sons, 360 West Hoffman Ave., Lindenhurst, L. I., N. Y. The firm has been acting for several years as an unofficial branch office for Renick & Mahoney, Inc., New York 6, N. Y., for its line of oil handling equipment.

The Chivvis organization in its new location has access to increased and enlarged facilities for welding and other fabrication and assembly work. All work in the area sold by Renick & Mahoney requiring shop facilities will be performed by Chivvis, including the mounting of pumps, meters and hose reels on tank trucks. In addition, Chivvis will stock parts and can offer service facilities.

Two Canadian Meetings In Boston Machine Series

A SERIES of meetings sponsored by the Boston Machine Works Co., Lynn, Mass., for dealers have included two in the Canadian Maritime Provinces. Distributors for the companies line of Bosmaco oilheating supplies arrange the meetings in their own areas and invite dealers to attend. I. M. Nelson, national field representative for the company, delivers the principal address, "We must concentrate on the efficiency of our oilburner installations—how to do it."

Meetings under the program have been held as far west as Minot, N. D., with several in Chicago, Detroit, In-

Here's the **BEST** for Gas-tight and Smoke-tight FURNACES

TEN POUNDS
Asbestos Furnace Cement
FOR SETTING AND REPAIRING FURNACES, BOILERS, STOVES AND HEATERS
GRANT WILSON, INC. CHICAGO

FAST...
LEAK PROOF...
PERMANENT...
LOW COST!

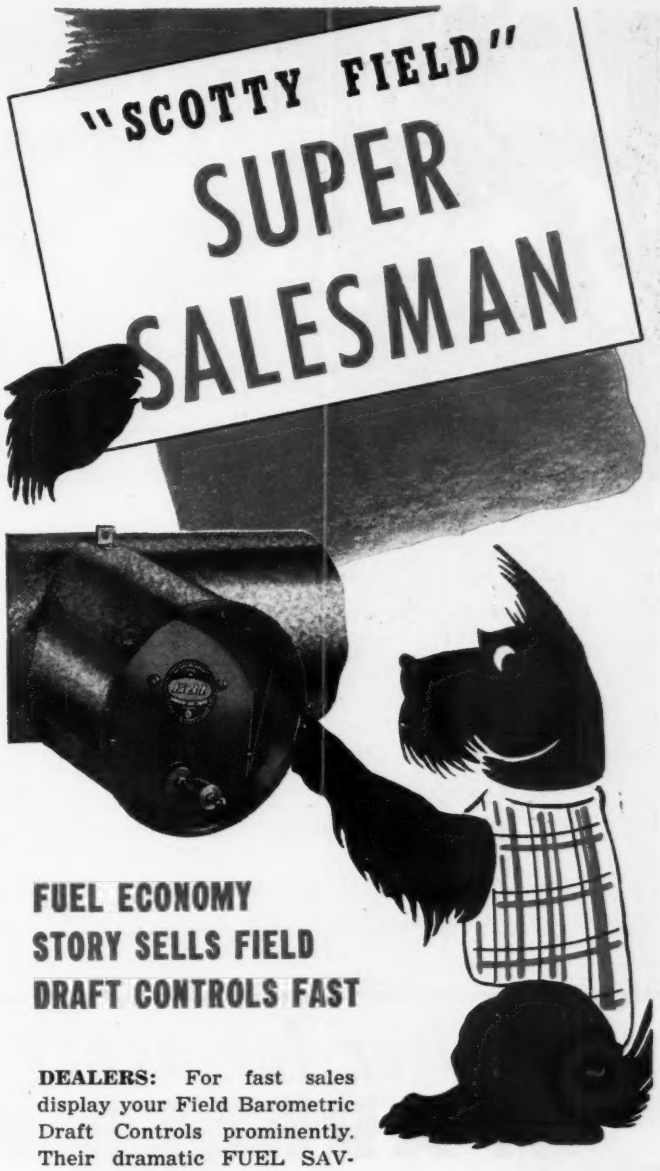
Only the finest high temperature refractories and binder materials are used in the manufacture of Grant Wilson Asbestos Furnace Cement—and expert blending and compounding, plus years of "know-how" assure easy workability. It is a proven product which has been tested and accepted and is in daily use by the most exacting Builders and Installers in the Industry.

Thoroughly fireproof, smokeless, odorless and acid-proof, it is ideally suited for use in oil-fired heating units. It's easy to get out of the can—easy to trowel in place—smooth to work, AND IT STAYS PUT.

Buy it from your jobber or write for a free 5 lb. sample.
GRANT WILSON INC., Board of Trade Bldg., Chicago 4, Illinois

Grant Wilson inc.
ASBESTOS and INSULATING MATERIALS

"SCOTTY FIELD" SUPER SALESMAN



FUEL ECONOMY STORY SELLS FIELD DRAFT CONTROLS FAST

DEALERS: For fast sales display your Field Barometric Draft Controls prominently. Their dramatic FUEL SAVING story makes them best-sellers, self-sellers!

A Field Barometric Draft Control improves the performance of any heating plant—provides for lower fuel consumption, increased safety, longer plant life. That's why dealers find it profitable and easy to sell the efficient, durable Field Barometric Draft Control. Write today for complete information on the Field Barometric Draft Control line.

On The Finest Heating Equipment
Field Controls The Draft.

FIELD BAROMETRIC DRAFT CONTROLS

FIELD CONTROL DIVISION
M. D. CONKEY & COMPANY RENDOTA, ILLINOIS

AFFILIATES:
CONCO MATERIALS HANDLING DIVISION
CRANES—HOISTS

Field REGISTERED

AFFILIATES:
CONCO BUILDING PRODUCTS, INC.
[illegible]—STONE

BAROMETRIC DRAFT CONTROLS

fueloil & oil heat

Boston Machine Works *meeting at Halifax, Nova Scotia, August 16. Shown at the speaker's table are: R. L. Dennis, manager, Oil Heating Supplies Div., Boston Machine Works Co.; I. M. Nelson, national field representative, Boston Machine and H. Earl Thompson, general manager, Steel and Engine Products Ltd., Liverpool, N. S., sponsors of the meeting.*

dianapolis, Philadelphia and other points. All have been well attended, with both the sponsors of the meeting and the dealers enthusiastic in their reception.

Mr. Nelson and Ralph L. Dennis, manager, oil heating supplies division, toured the Canadian Maritime Provinces from August 12 to 22 and participated in two meetings sponsored by the Steel and Engine Products Co., Ltd., Liverpool, Nova Scotia. The meetings were held at the Admiral Beatty Hotel in St. John, New Brunswick and the Nova Scotian Hotel in Halifax, with 52 dealers at the New Brunswick meeting and 56 at Halifax. One man came 500 miles from Newfoundland to attend the first meeting, with some driving as far as 300 miles to get to the second gathering. Indicative of the success of the meeting was the order one company placed for a thousand dollars worth of CO_2 testing equipment after the meeting. The equipment was not sold by Boston Machine, but the comprehensive plan outlined by Mr. Nelson in his talk induced the dealer to decide that he could improve his installations if he began to use scientific testing equipment.

Catalog contains Data on National Packet Boilers

CATALOG NO. 572, prepared by The National Radiator Co., Johnstown, Pa., contains complete details on the National Packet, oilfired steel boiler unit for hot water heating systems up to 510 sq. ft. A cut-a-way illustration indicates position of each part of the unit, with engineering drawings depicting roughing-in dimensions and sizes of piping

A filter for every Oil Burner Service

SPARKLER FUEL OIL FILTER

Model OB-2 actual size

Approved by Underwriters' Laboratories

THREE SIZES OB-2 OB-4 OB-8

You get

- ★ **A nice profit item**
- ★ **Easily stocked refill element. One type filter disc used on all filter sizes.**
- ★ **Reduction in service calls due to clogged nozzle screens.**
- ★ **Customer satisfaction — no burner trouble when filling of tanks stirs up sediment.**

The positive seal prevents by-passing of unfiltered oil, this eliminates trouble due to clogged nozzle screens. All oil that reaches the burner is filtered through the rayon element that removes minute particles down to .002 and any water in the oil. This is particularly important with small size burners used in the average home.

Three sizes—OB-2 for average home size burners. OB-4 for larger burners or unusually dirty tanks. OB-8 has four times the capacity of OB-2.

Order from your jobber

SPARKLER MANUFACTURING CO., Mundelein, Ill.

Makers of industrial filters for the Food, Chemical, and Oil Processing industries for over a quarter of a century.

Member, Oil Heat Institute of America

LOOK! The Sensationally New Combustioneer Aristocrat

the best is better than ever . . . Here's Why

The new Combustioneer "Aristocrat" oil-fired winter air conditioning furnaces feature the new "TVV"* burner. The Combustioneer "Aristocrat" features slip-joint construction; heavy **10-GAUGE** steel heat exchanger combining up draft-down draft design. All surfaces are **PRIMARY** heating surfaces—permitting maximum heat extraction and low stack temperature. Stainless steel Combustioneer humidifier provides healthful humidity.

Combustioneer®

New! Exclusive! TVV* OIL BURNER—

***TRIPLE VELOCITY VISORHEAD®**

- ★ **High velocity air above nozzle deflected downward by visorhead.**
- ★ **Swirling velocity around nozzle thoroughly intermixes oil with air.**
- ★ **Low velocity below nozzle permits downward deflection.**

TOP PROFIT LINE FOR 1950

Dealer Franchise with a Future

Dealerships open—direct, factory-to-you basis. Combustioneer Franchises are backed by a complete heating line, liberal co-op plan, practical selling helps, factory sales, service and engineering assistance. *Combustioneer* can triple your sales this year! The time to act is now—obtain complete details. Write or wire us! *Factory representatives wanted!*

COMBUSTIONEER DIVISION
THE STEEL PRODUCTS ENGINEERING CO.
1226 West Columbia St., Springfield, Ohio
Manufacturers of Heating Equipment since 1928

Combustioneer OIL BURNERS, GAS BURNERS, STOKERS, COAL-GAS-OIL FURNACES, HUMIDIFIERS

Use oil heat

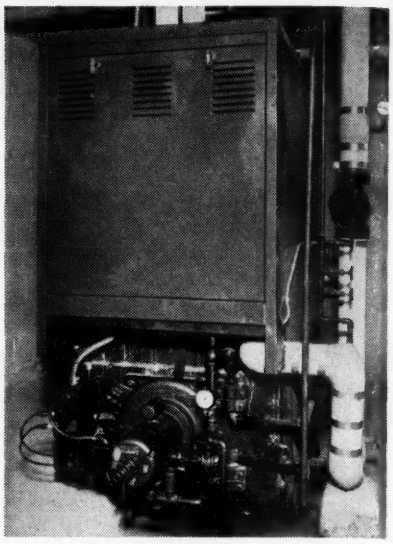
connections. Two models are presented, one with a flush jacket, the other with an extended jacket.

Supplemental parts of the unit described are its pressure type oilburner, circulating pump, controls, expansion tank and air eliminator, copper coil tankless water heater, draft regulator and relief valve.

Blackmer Bulletin offers Facts about rotary Pumps

"FACTS" is the title of a 6-page, 2-color bulletin prepared by Blackmer Pump Co., Grand Rapids, Mich., to illustrate design, construction, maintenance, operation and application of rotary pumps. Details of both sliding and swinging valves are shown, along with selection table for specifying.

A series of drawings illustrate completion of one pumping cycle, showing the position and action of the vanes throughout the operation. Other photographs and diagrams show construction and design features of the pumps and maintenance procedures. The line covers a range of sizes from 51 to 1500 gpm.



York-Shipley *single phase rotary oilburners used in Shirley-Duke apartment development, Washington, D. C., provide heat and hot water for more than 2,000 apartments. This represents a unique application of small capacity burners for this type of work, the units being rated at from 2½ to 6 gph of No. 5 oil. The burner shown in the picture heats 10 apartments.*

CHECK YOUR

Eddington

NEEDS HERE

- FILTERS
- NOZZLES
- VALVES
- AIR-CONES & STABILIZERS
- STRAINERS
- ADAPTORS
- INSPECTION MIRRORS
- SERVICEMAN'S NOZZLE KITS

Complete information yours for the asking.

Hollow cone

or Solid spray

It's EDDINGTON NOZZLES for me . . .

Because they're

1. Tested for spray pattern
2. Tested for spray angle
3. Tested for rated capacity

EDDINGTON METAL SPECIALTY COMPANY
1050 Czarnecki Street, Eddington, Pa.

Webster Electric adds three Authorized service Stations

ADDITION of three firms to its authorized service stations has been announced by Webster Electric Co., Racine, Wis. Thermal Co., Inc., Des Moines, Ia.; Girkins Electric Co., Toledo, Ohio and Gensco, Inc., Tacoma, Wash., have been named.

Oil-O-Matic raises sales Quotas for fiscal Year

DESPITE strong possibilities of steel allocations during the coming year, E. H. Davison, general sales manager, Williams Div., Eureka Williams Corp., Bloomington, Ill., announces sales quotas for the 1950-51 fiscal year 46% above last year's. The announcement was made at an annual sales meeting following the close of the company's fiscal year on July 31.

Mr. Davison stated that "full speed ahead" orders for production of Oil-O-Matic heating equipment have been given and that among voluntary steps taken to conserve steel is the elimination of non-essential steel decorative features from boiler and furnace units.

In addition, two complete programs

have been mapped out, one operating on the basis that the company will be able to obtain enough steel to meet its sales quotas, the other covering the situation if steel supplies suddenly are curtailed. The company, Mr. Davison continued, is ready to swing over to its standby program, if the necessity arises.

Offer reference Tables For Lite-Cast Chambers

A SET of reference tables, offered by Monogram Products Co., Inc., Philadelphia 4, Pa., lists most of the prominent boiler series and the corresponding Lite-Cast combustion chamber which is adaptable to each unit.

The tables were prepared for use by purchasing agents, salesmen, countermen in supply houses and installation men, the company explains, and are the result of tedious research. Prepared in booklet form the tables are expected to be helpful in selecting the correct size combustion chamber for installations.

Rockford Brass Works opens Moline, Ill., division Office

THE MOLINE, ILL., DIVISION recently has been established by the Rockford Brass Works, Rockford, Ill. The new division occupies a building 80 ft. wide by 200 ft. long, with a total production area of 16,000 sq. ft. and began production when building alterations were completed about September 1.

The expansion was made to increase the company's foundry capacity.

Winkler low pressure Burner Featured on advertising Poster

ONE OF TWO POSTERS available for outdoor advertising offered to Winkler dealers features the low pressure oil-burner made by U. S. Machine Corp., Lebanon, Ind. The posters feature prominently a picture of the burner and the trade name, and allow ample space across the bottom of the poster for the name of the distributor, address and telephone number.

The posters are made by The Ad-Ver-Tis-Er, Fort Wayne, Ind., for U. S. Machine Corp. and are designed for use on the billboards the Fort Wayne concern has throughout the country.

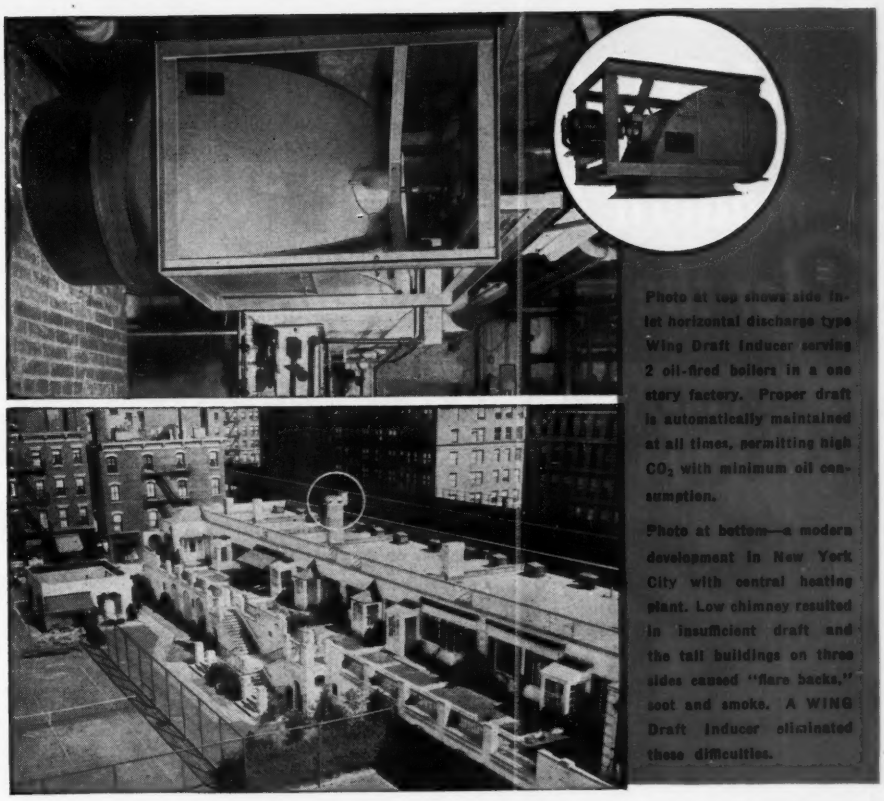


Photo at top shows side inlet horizontal discharge type Wing Draft Inducer serving 2 oil-fired boilers in a one story factory. Proper draft is automatically maintained at all times, permitting high CO_2 with minimum oil consumption.

Photo at bottom—a modern development in New York City with central heating plant. Low chimney resulted in insufficient draft and the tall buildings on three sides caused "flare backs," soot and smoke. A WING Draft Inducer eliminated these difficulties.

Positive Draft REGARDLESS OF WEATHER OR SIZE OF CHIMNEY

The Wing Draft Inducer provides a means for furnishing positive, uniform adequate draft for low pressure heating plants without the need for tall, unsightly, expensive stacks.

It permits operating at high efficiencies without regard to weather conditions.

Thorough and efficient combustion with high CO_2 content is assured. Smoke, gas and explosion hazards are reduced or eliminated.

L. J. Wing Mfg. Co.

General Offices and Factory:
66 Vreeland Mills Road, Linden, N. J.
Canadian Factory: Montreal

WING

Wing DRAFT INDUCERS

NOW a complete line of modern MARLOW PUMPS for the petroleum marketer!

A MARLOW FOR EVERY PUMPING JOB

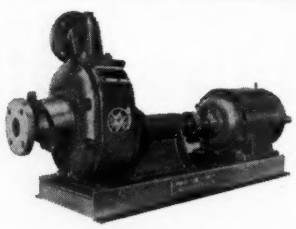
Marlow Type SC

MARLOW CENTRIFUGAL PUMPS

For high capacity and high efficiency in pumping light liquids on flooded suction installations. Close and long-coupled models, sizes 1 to 4 inches, capacities 10 to 1000 GPM. Features include an easily renewable sealing ring at impeller inlet, deep-groove oversize ball bearings, and a John Crane dripless shaft seal. Motors from ½ to 30 HP. Explosion proof or fully enclosed.

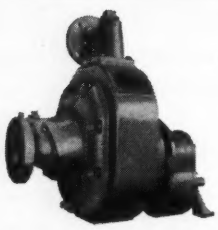
MARLOW SELF-PRIMING CENTRIFUGAL PUMPS

The only light-liquids pump for long, trouble-free service on suction lifts. Marlow Self-Primers offer high capacity and high efficiency with *automatic priming*. Suitable for underground storage or for transfer or loading operations. Close and long-coupled models, sizes 1½ to 10 inches, capacities 15 to 3500 GPM. Self-priming, self-purging design assures automatic priming and freedom from vapor lock. Free clearances at impeller help eliminate wear, prolong life and original high efficiency. Motors ⅓ to 60 HP, explosion proof or fully enclosed.



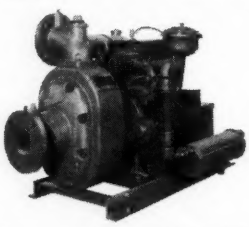
Marlow Type EL

Models also available for belt and engine drive and for high pressure service.



GEAR INCREASER PUMPS

NOW — a *quiet*, dependable centrifugal tank truck pump that couples direct to power take-off. Installs like a rotary but has a centrifugal's smooth efficiency, high capacity and *long life*. Sizes 2 and 3 inch. Capacities 20 to 200 GPM.



ENGINE DRIVEN PUMPS

Marlow Self-Priming Centrifugals for refueling or transfer, where mobility or stand-by operation is required. Sizes 1½ to 8 inches. Capacities 15 to 2000 GPM. 2- and 3-inch sizes available with electric starter and spark arresting muffler for tank truck service.

Wherever pump users gather you will hear the name MARLOW used as a standard of pump efficiency, trouble-freedom and long life. It will pay you, too, to standardize on the standard.

Write the Marlow factory for complete information and the name of the Marlow dealer nearest you.

MARLOW PUMPS

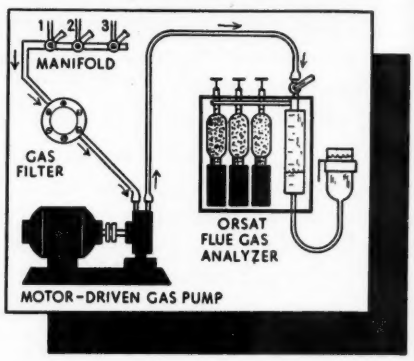
596 Greenwood Avenue, Ridgewood, New Jersey

MANUFACTURERS OF QUALITY PUMPS SINCE 1924

Everyday Snags

Easy Flue Gas Testing

The rig shown in the diagram, for power pumping of flue gases to a three-cell orsat gas analyzer, has been used by one engineer both in laboratories and industrial boiler rooms. As the gas pump he usually uses the compressor from an old low pressure gun type burner; his pet model works properly, he says, driven at 1150 rpm and occasionally given a squirt of light lube oil or a few flakes of graphite, fed into its air intake



for lubrication. However, several makes of small blade-type air compressors, made for such service, may be used.

The gas filter first was used to keep soot out of the gas analyzer. Now, with precautions taken to run the pump the same number of seconds each time gas is analyzed, special filter paper is used. The amount it darkens gives a rough idea of smoke, soot, and clean burning.

Connected to the manifold are lines of different lengths to the different boilers of one large industrial plant. One problem the engineer had to lick, in connection with using the air filter to obtain rough smoke readings, had to do with the fact that more gas came through a short sample line, when the pump was operated a timed 20-seconds, than through a sample line much longer. The use of larger lines and a metering orifice at the output side of the filter seems to have helped end the problem.

* * *

GENERAL POWER PLANT CORP., New York 16, N. Y., has published an 8-page bulletin No. 103, containing a discussion of the nature of haze and its use as a combustion index. Concerned with combustion control for industrial boilers and furnaces, the booklet tells of the application of Robot-Eye units to permit smoke-free operation.

Hanker for a thrifty tanker?

DODGE TRUCKS are "Job-Rated" for economy

If you want to save money (and who doesn't?), start hauling your gas, fuel oil and other petroleum products with Dodge "*Job-Rated*" trucks.

You can get Dodge trucks that are "*Job-Rated*" to handle *your loads over your roads*—with utmost economy and power to spare.

In fact, your Dodge trucks will be "*Job-Rated*" from bumper to bumper. All units from engine to rear axle will be engineered and sized for your particular hauling needs. No wonder you can depend on Dodge "*Job-Rated*" trucks to save you money!

See your Dodge dealer today. He will gladly show you how and why a Dodge truck is "*Job-Rated*" for economy.

"Job-Rated" . . . for low-cost transportation

POWER: . . . 8 great truck engines—each "*Job-Rated*" for *PLUS* power.

ECONOMY: . . . priced with the lowest. "*Job-Rated*" for dependability and long life.

BIGGER PAYLOADS: . . . carry more without overloading axles or springs because of "*Job-Rated*" *WEIGHT DISTRIBUTION.*

EASIER HANDLING: . . . sharper turning! Parks in tight places. "*Job-Rated*" maneuverability!

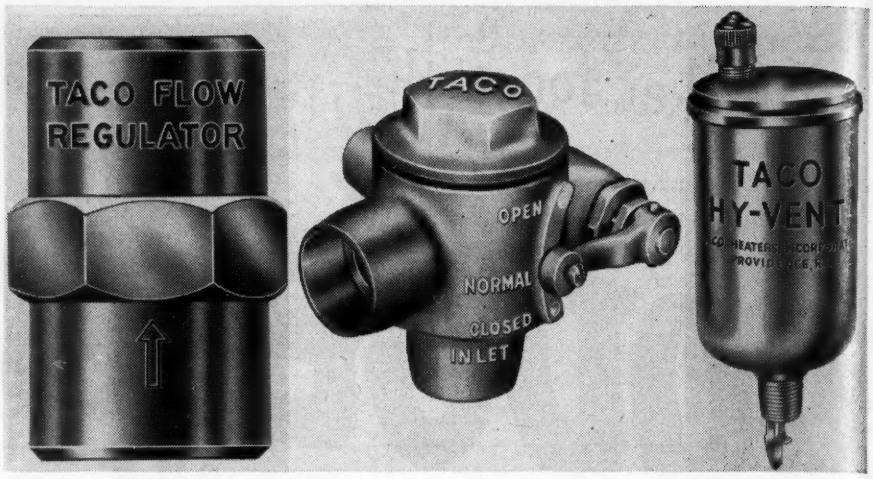
COMFORT: . . . widest seats . . . windshield with best vision of any popular truck. Air-cushioned, adjustable "chair-height" seats.

SAFETY: . . . finest truck brakes in the industry . . . hand brake operating independently on propeller shaft on *all* models—½-ton and up.

With all their extra value DODGE "Job-Rated" TRUCKS are priced with the lowest

fueloil & oil heat

New Products



Flow regulator Sweat check Hy-Vent

Taco flow Regulator, Sweat Check, Hy-Vent

THREE ITEMS have been added to the Taco line of hot water heating accessories. The flow regulator is designed to control accurately the flow of water at pressures from 15 to 150 lbs. psi through tankless heaters at rated capacities. The regulator features brass and rubber construction with two internal pipe threads, in sizes for 3 and 4 gpm, with ½" connections; 5, 6 and 8 gpm, with ¾" connections.

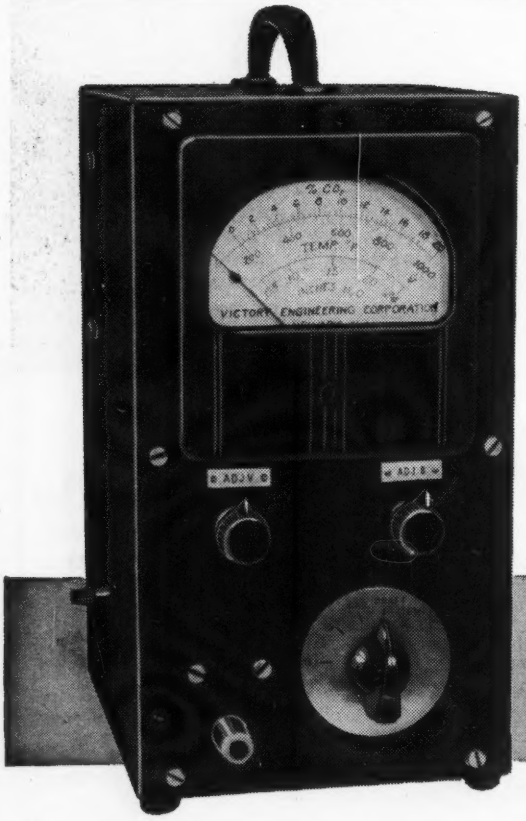
Taco sweat check is a flow valve for sweat or solder type connections, to prevent hot boiler water from flowing to heating system when circulator is not running. It is all bronze construction, with a machined weight and seat, bronze spring cushion, open, closed and normal adjustment, available only in 1" size. Moving the adjusting lever with the circulator running cleans the seat.

Hy-Vent is an automatic hot water air valve for venting air from panel heating systems, high points and down feed heating systems, as well as cold water lines. Of non-corrosive, float type construction it is offered with an ⅛" connection and measures 3 3/16" x 1½".

Made by: Taco Heaters, Inc., 137 South St., Providence 3, R. I.

Hart SF Head may be used On HCM Burners now installed

SUPER-FIRE combustion head, identified by symbols "SF," is now shipped as standard equipment on all Hart model



VECO

TROUBLE FREE

Complete Combustion Testing

New-Revolutionary

CO_2 Analyzing Elements *(Sealed in Glass)*

SINGLE METER — All readings on one dial

Constant accuracy in service use.

3 IN 1 OPERATION

CO_2 INDICATOR
STACK THERMOMETER
DRAFT GAUGE

COMPACT PORTABLE
Weighs only 7 pounds

Service Free — Simple to Operate
Economical to Buy
Ideal for testing to F.H.A. requirements

Victory ENGINEERING CORPORATION
744 Broad Street, Newark, New Jersey

NEW WHITE 3000 FOR FASTER OIL DELIVERIES IN OAKLAND

. . . Reports Leo Jacobs, Vice-President, S. T. Johnson Co., Oakland, Calif.

WHERE TRAFFIC adds so much to fuel oil and gasoline delivery time and costs, the exclusive advantages of the great new White 3000 mean the most.

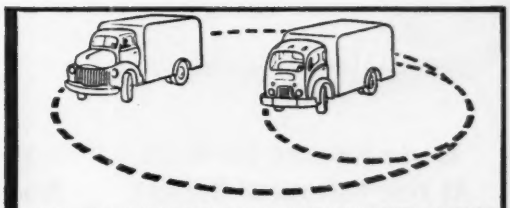
The S. T. Johnson Co., of Oakland, Calif., speeds deliveries of fuel oil throughout Oakland by White 3000 . . . for *more* deliveries in *less* time . . . at *lower* cost.

"It's the most maneuverable truck we've ever owned," reports Leo Jacobs, vice president of this large west coast oil firm. "It is ideal for our needs because it's engineered to our exact requirements."

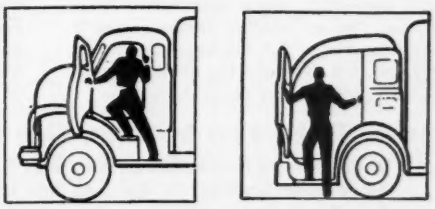
The greater maneuverability and shorter turning radius help drivers save time in traffic, reduce parking and delivery time. It takes up less space on the street and in the garage.

Its functional design . . . its greater carrying capacity . . . power-lift cab . . . *completely new* approach to reducing delivery costs—these are all exclusive White 3000 advantages that make it tomorrow's truck *today!*

Your White Representative will be glad to provide facts about the advantages of this great, new White 3000 as they apply to your exact needs.



SHORTER TURNING RADIUS SAVES MANEUVERING TIME



BETTER CAB ACCESSIBILITY SAVES DRIVER TIME

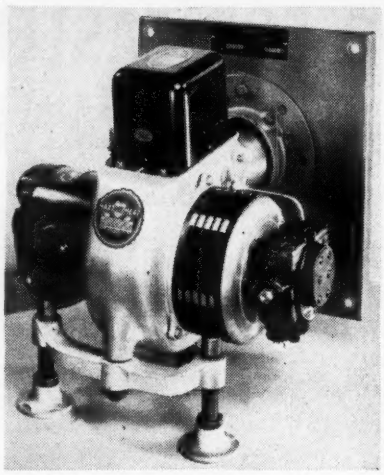
Tips its cab to service

THE WHITE MOTOR COMPANY
Cleveland 1, Ohio, U. S. A.

FOR MORE THAN 50 YEARS THE GREATEST NAME IN TRUCKS

HCM gun type burners and may be added to HCM burners already installed. Underwriters' approval authorizes a firing range from 0.65 to 1.65 gph for burners with the built-in head. Capacity of the HCM without the head remains at 1.35 to 3.00 gph.

The device consists of two pieces of steel, both fixed and non-adjustable in the secondary air stream. They can be removed completely, however, if desired. One piece is a disc baffle, attached to the nozzle assembly, the other is an aspirating and directing collar welded



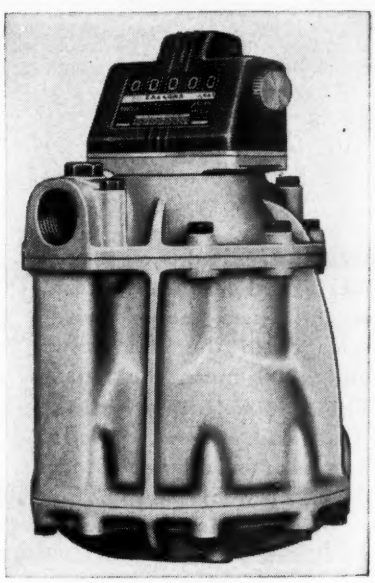
into the air cone at the mouth of the blast tube. Hollow cone 80° tips are used throughout, with secondary air introduced under four way control—positive direction in a wide angle across the mouth of the air tube, high velocity at outer edge of air stream, low velocity at the center of the tube and constant volumetric ratio of high and low velocity secondary air.

Made by: Hart Heat Div., Avery Farm Machinery Co., 2006 S. Washington St., Peoria 2, Ill.

Bowser 110 gpm Meter For petroleum Products

A NEW BOWSER 2" meter for industrial liquids and petroleum products has been added to the line of Xacto meters. Of the positive displacement type, the meter has five vertical pistons and was developed to meet a demand for accurate measurement in the 110 gpm range.

All interior parts are constructed of special hard carbon or stainless steel to eliminate metal-to-metal contacts at fric-



tion points, with cylinder block and bowl available in cast-iron or bronze. Straight reading, predetermined quantity or ticket printing dials can be supplied.

Made by: Bowser, Inc., 1302 East Creighton, Fort Wayne 2, Ind.

Artisan Products Adds Model 60 Workshop Trailer

THE MODEL 60 Workshop Trailer, recently announced by Artisan Products, Inc., Cleveland 11, Ohio, is of all steel construction, designed to be attached to

A NEW

Kresky Achievement!

THE KRESKY "50-30" OIL FLOOR FURNACE

***Kresky*, and only *Kresky*, can deliver so much heat from such a small package.**

1. **A BTU output of 52,700. (commercial standards CS-113)**
2. **Outside dimensions only 24 inches wide, 30 inches long, 30 inches deep.**
3. **Choice of flat or dual wall registers.**
4. **Automatic Thermostatic controls (or manual control if preferred).**
5. **Maximum oil consumption less than 2 pints per hour.**

***Kresky* Designed the 50-30 At Your Customers' Request**

Your customers asked Kresky for a smaller, more powerful, more economical floor furnace. The oil heating industry said it was impossible. But Kresky research not only met, but exceeded the public request. *Listed Underwriters Laboratories, Inc.*

***Kresky* Dealers Always Have Products That Meet Public Wants**

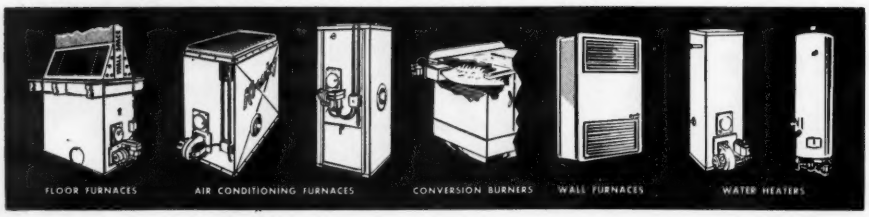
Since 1910 Kresky has been the best known name in Oil Heating. The Famous Kresky Forced Air Induction Oil Burner, the original and still the leader, has led to the development of many famous Kresky firsts, of which the new Kresky 50-30 is just one.

To be First in Sales, First be a Kresky Dealer

Write for more information on the Kresky 50-30, as well as the other equally outstanding products, in the long line of Kresky oil heating equipment. *P.S.* You'll find the Kresky policy and the Kresky merchandising methods different, too.

KRESKY MFG. CO., INC.
100 H STREET, PETALUMA, CALIF.
Canadian Factory: Kresky Mfg. Co., Ltd., Vancouver, B.C.

Kresky OIL BURNERS
SINCE 1910



AUTOMATIC COMFORT CONTROL TOP REGULATES SPACE HEATERS

THERMOSTATICALLY

You, as a dealer, know the sales-making advantages of Thermostat Controlled Heat. Always found on only the most expensive heating systems, it is now available for all your Space Heater customers, too.

Tell them about it. Display the A-P Automatic Comfort Control Set. Explain its benefits to your floor salesmen. You will perform a beneficial service to your space heater customers — at high profit to you. Remember, this easily installed Comfort Control Set works on ALL A-P Controlled Oil Heaters you have sold since 1939, as well as on those you are selling now. This means an EXTRA sale and profit on all your past heater sales, and an INCREASED profit on new heater sales.

AUTOMATIC PRODUCTS COMPANY

2458 North Thirty-Second Street, Milwaukee 45, Wisconsin

Illustrated is the A-P Comfort Control Top Model 240-ED for space heaters with one or two burners.

TEN MILLION READERS of National Magazines are learning the advantages of A-P Dependable Controls and AUTOMATIC COMFORT CONTROL. Illustrated banners that merchandise these important A-P advantages are available free. Write us or ask your distributor or manufacturer.

AP

DEPENDABLE OIL Controls

Standard Equipment on Vaporizing Oil Burning Heaters, Furnaces, Floor Furnaces, Water Heaters

fueloil & oil heat

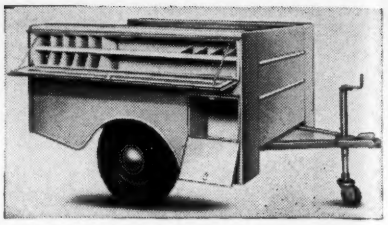
OT* SERVICEMAN SAYS —

Service in a jiffy!

"I don't putter around on service calls when Fuel Units are Webster Electric. Everything is easy to get at . . . no standing on your head to reach various parts. Now service in a jiffy is fine for customers but for selfish reasons I find it better too. I can make more service calls and make more money when everything is easy to get at and not complicated. You've probably guessed why I specify Webster Electric Fuel Units for replacement and recommend them for new equipment. Bet ya a buck—if you try them you'll agree with me." Made by the Webster Electric Company, Racine, Wisconsin, Established 1909. *Old Timer

WEBSTER ELECTRIC
RACINE ◆ WISCONSIN

"Where Quality is a Responsibility and Fair Dealing an Obligation"



a passenger car or truck. The trailer body is 75" in length, fitted with side compartments for tools and materials.

The trailer incorporates a large interior loading space between the side compartments to accommodate bulky materials and is equipped with an adjustable landing gear and safety coupler for attachment to the towing vehicle. The carrying capacity of the model 60 is 1,000 lbs.; its inside bulk loading space measures 46" wide by 29" high by 21" high. Overall weight is 1050 lbs.

Made by: Artisan Products, Inc., 3540 West 140th St., Cleveland 11, Ohio.

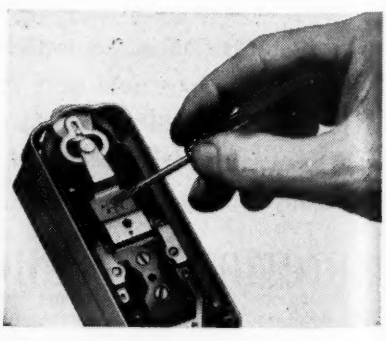
Tri-Saw Power Saw Attaches to ¼" Drill

TRI-SAW portable all-purpose power saw has been designed for attachment to any heavy-duty ¼" electric drill for cutting through walls, baseboards, floors, ceilings, angle irons, metal and wood lath, as well as stainless steel. For heating and sheet metal work it is described as ideal for cutting register and duct openings, with a variety of blades available for many types of wood and metal cutting.

Distributed by: E. R. Princeton and Associates, 2456-W Diversey Blvd., Chicago 47, Ill.

Perfex Thermostats now Have adjustable Heaters

PERFEX thermostats now are available with built-in adjustable heaters, eliminating the need for a serviceman to carry a variety of heater coils or plugs to place the proper heater in a thermostat.

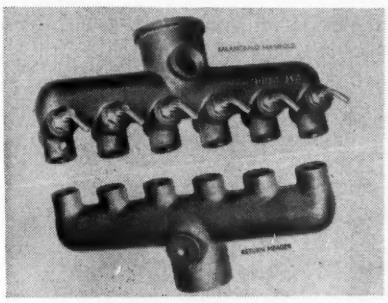


Adjustments, ranging from .4 to .8 amps., which cover almost every installation, are quickly and simply made by turning an adjusting screw on the back of the thermostat. After the adjustment has been completed, the Perfex Magic Dial takes over to provide the desired temperature.

Made by: Perfex Corp., 500 West Oklahoma Ave., Milwaukee 7, Wis.

H & G Balance-Flo Manifold, return Header

BALANCE-FLO manifold and return header units have been introduced under the trade name H & G. The set is used for radiant and hot water heating systems to effect zone control and is available with copper sweat fittings or iron pipe size in-feed, in combinations from 4 to 8 outlets.



The units eliminate the need for extra valves, joints and fittings, are made of one-piece, non-corrosive, cast-bronze and can be furnished with ½" or ⅜" outlets. The Balance-Flo manifold has a built-in butterfly valve on each outlet, adjusted by "finger-tip" action for proper setting of the system.

Made by: H & G Plbg. Products Co., 6 Ohio Ave., Port Washington, N. Y.

Certified Convectors Equipped With Pre-Installed Dampers

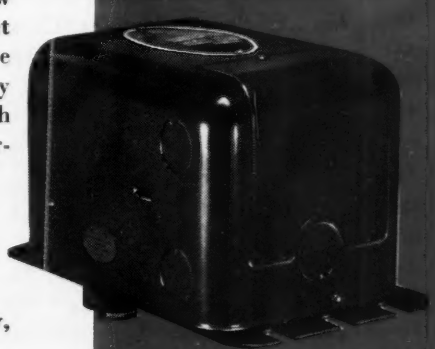
A LINE of Certified convector radiators, available in 20" and 24" heights, are offered in free standing types, adaptable for semi-recessed installation, and a model for completely recessed application. All models are equipped with pre-installed dampers, with heating elements of three ⅝" O.D. seamless copper tubes and flat aluminum fins with extruded collars.

Headers with offset tappings and cabinets with rounded corners and a removable front are other features. Available with 2¾" or 1¼" tappings for in-

OT* SERVICEMAN SAYS —

"What a pleasure — IT'S EASY TO GET AT!"

"If you've ever nearly lost your fingers trying to hook up a transformer, you know what I mean when I say, 'It's easy to get at.' That Webster Electric crowd must have engineers with practical sense, for they have made their transformer cases with large enough openings and with space arrangement to make my work a pleasure. No more of this trying to thread a needle stuff for me... I just specify Webster Electric transformers and wire up my jobs the easy way. Why don't you try it? They are made by the Webster Electric Company, Racine, Wisconsin, Established 1909."



*Old Timer.

WEBSTER ELECTRIC

RACINE ◆ WISCONSIN

"Where Quality is a Responsibility and Fair Dealing an Obligation"

let and outlet, 1¼" tappings for vent fittings.

Made by: Certified Products, Inc., 41 Van Buren St., Newark, N. J.

Fiske Econ-O-Miser Kit To improve burner Efficiency

THE FISKE fuel Econ-O-Miser kit consists of three products, the addition of which to an oilfired installation is designed to improve burner efficiency. The first item is a stack Econ-O-Miser, installation of which is intended to reduce the "pull" of the chimney and eliminate back draft. Its advantage is described as retaining heat within the boiler or furnace for a maximum length of time.

Also part of the kit is a simplified combustion head, Econ-O-Head, which can be added to nearly all high pressure gun burners. It builds static air pressure by choking air through smaller area and forcing some of the air through vanes of the end cone at a higher velocity.

Therm-O-Glo, a self-cleaning heat reflector, completes the items included in the kit. This is a powder which is sprinkled on the combustion chamber floor. After the burner operates at normal temperatures for 8 hours the powder crystallizes and eliminates cold combustion floors by reflecting flame heat. It continues to glow after the burner shuts down.

Made by: Fiske Products, Inc., 26-44 Washington Ave., Pleasantville, N. Y.

Hazle One-Piece Revolving Ventilator and Chimney Top

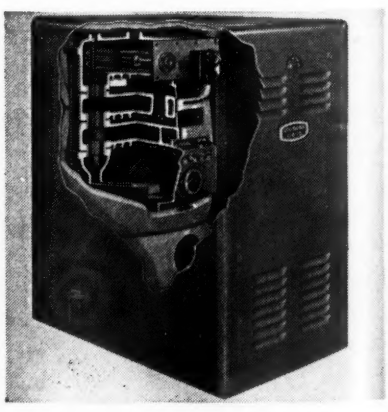
HAZLE revolving ventilator and chimney top features one-piece construction, with the vane or top wing formed into a double sheet. Offered in sizes from 5" to 16", the hoods of the devices are made of heavy-gauge, galvanized steel, with electro-galvanized bolts used to mount the hood to the pivot area. Mounting brackets and arms are simple in design and centrally balanced. Six of the 6" ventilators are shipped disassembled in a 9" x 9" x 22" carton for compact storage.

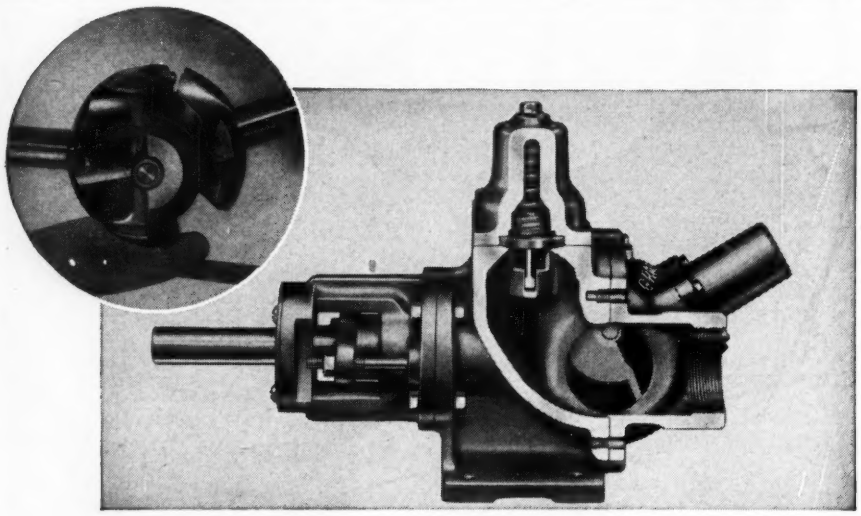
Made by: Penn Metal Ware Co., N. E. Station, Wilkes Barre, Pa.

Weil-McLain OB-15 is oil Boiler for small Homes

OB-15 OILFIRED boiler-burner unit, consistng of a cast-iron boiler and type A Weil-McLain oilburner, is intended for heating small homes and has an IBR net connected rating of 235 sq. ft. of steam, 435 sq. ft. of hot water radiation.

The unit is shipped assembled, with jacket, insulation and combustion chamber, designed for easy installation. Available with tankless or tank type indirect water heater located in the top section, the boiler is round in design and features a "back-and-forth" fire travel. Burner and controls are completely enclosed by





Granco makes Superior Pumps...

QUIETNESS...Large Capacity...Compactness...Ease of Mounting...Efficiency...features YOU and every other petroleum marketer want in a pump. Only in GRANCO do you get them all!

- ★ **The rotor is the only moving part**
- ★ **No metallic contact between the rotor and the housing**
- ★ **Quiet at all speeds**
- ★ **Chatterproof relief valve**
- ★ **Outboard ball-bearing for perfect alignment**

GRANCO Rotary Positive Displacement Pumps are amazingly simple...adapted to every possible condition...efficient in handling all materials, from aviation gasoline to heavy bunker oil. These qualities have won for GRANCO Pumps instant acceptance wherever they have been installed...truck mounted or bulk plant. WRITE TODAY or fill in the coupon for literature on these *industry-proven* pumps.

GRANBERG CORP.
1306-67th Street, Oakland 8, California
Send complete details to:

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Firm _____

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City _____ State _____

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GRANBERG CORP.
1306 SIXTY-SEVENTH STREET
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Get a better day's work out of your Truck Dollar

CHEVROLET TRUCKS

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You invest money in a truck to *get work done.* And you can prove to your own satisfaction that a Chevrolet truck does more work for every dollar you put into it.

You get *more for your money* right from the start, because your Chevrolet truck is priced at rock bottom. Chevrolet volume production—far and away the biggest in the truck field—makes possible extra features and extra engineering advantages at lowest cost.

You get *more for your money* every driving mile, because Chevrolet trucks are economical to operate. The top-rated efficiency of Chevrolet Valve-in-Head engine design saves money on gas and oil day in, day out.

You get *more for your money* right through the years, because your Chevrolet truck cuts upkeep to the bone. Hypoid rear axles, diaphragm spring clutch, ball-type steering and many other great truck features help keep your truck on the job and out of the shop.

Get the full "more-work-per-dollar" story from your Chevrolet dealer—and get America's biggest selling, best performing truck: Chevrolet.

CHEVROLET MOTOR DIVISION, *General Motors Corporation*
DETROIT 2, MICHIGAN

These Great Features Help Tell Why
CHEVROLET TRUCKS
ARE THE FIRST CHOICE OF
TRUCK BUYERS EVERYWHERE

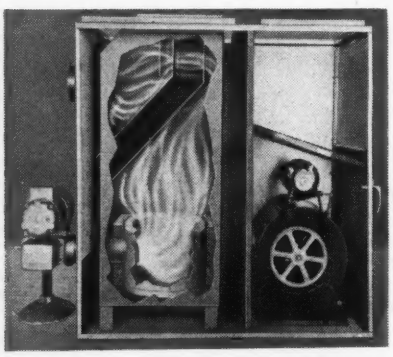
TWO GREAT VALVE-IN-HEAD ENGINES: the new Loadmaster and the improved Thriftmaster—to give you greater power per gallon, lower cost per load • THE NEW POWER-JET CARBURETOR: smoother, quicker acceleration response • DIAPHRAGM SPRING CLUTCH for easy-action engagement • SYNCHRO-MESH TRANSMISSIONS for fast, smooth shifting • HYPOID REAR AXLES—5 times more durable than spiral bevel type • DOUBLE-ARTICULATED BRAKES —for complete driver control • WIDE-BASE WHEELS for increased tire mileage • ADVANCE-DESIGN STYLING with the "Cab that Breathes" • BALL-TYPE STEERING for easier handling • UNIT-DESIGN BODIES—precision built.

the jacket. Over-all dimensions of the compact unit are 22½" wide, 38" long and 41" high.

Made by: Weil-McLain Co., Michigan City, Ind.

Firewel Model 135 Furnace Fired with 1 Gph Burner

FIREWEL MODEL 135 oilfired furnace-burner unit, is shipped complete with



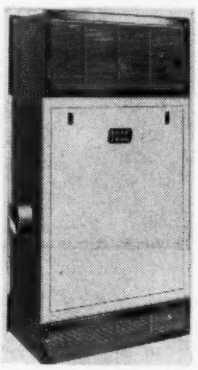
its 1 gph gun type oilburner and features a heat exchanger welded into one solid piece, with a good portion of it made of 12 gauge steel. Jacketing is rustproof, with a baked hammerloid finish.

The units have been subjected to field tests for the past three years and because of the simplicity of construction are described as trouble-free and dependable.

Made by: The Firewel Co., Inc., 1042 Clinton St., Buffalo 6, N. Y.

Add In-A-Wall Furnace to Even-Temp Oilfired Line

ADDED to the Even-Temp line of oilfired heating equipment is a self-contained furnace, installed in a wall partition or mantel. Designed for the average sized home, the unit has a rated output of 52,000 Btu/hr, is approved for placement direct on a wood or concrete slab floor, with zero clearance between wall enclosure and furnace casing and may be connected to abutting chimney or flue.



No duct work is required, since built-in cold and warm air registers are provided on both sides of the furnace. It features a two-speed circulating fan, which distributes heated air during the winter and circulates in the summer.

Made by: Northwest Metal Products, Inc., 55 Spokane St., Seattle 4, Wash.

Honeywell Electronic Outside Thermostat for Commercial Use

A LOWER COST THERMOSTAT, consisting only of a coil of wire and designed for installation outside of buildings, is called the Cyclotrol. Developed for small office and apartment buildings, the device regulates inside temperatures by measuring outside temperatures and contains a "heat sponge," electrically balanced with the outside thermostat.

When the electrical resistance of the thermostat is changed through a change in temperature, the resistance of the "sponge" also changes and it starts and stops the heating plant to maintain the electrical balance with the coil of wire of the thermostat. The Cyclotrol can be used with any heating system and can be set to lower temperature at night and raise it in the morning.

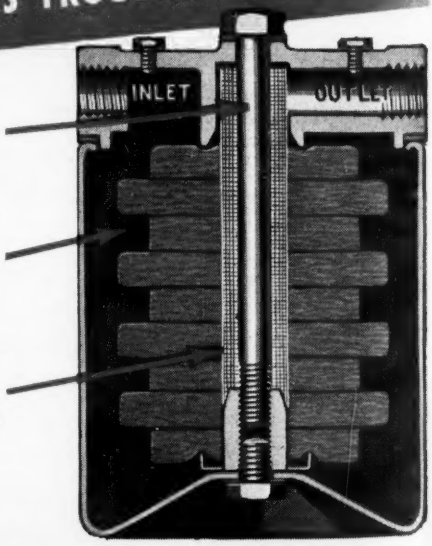
Made by: Minneapolis-Honeywell Regulator Co., 2753—4th Ave. South, Minneapolis 8, Minn.

All Wool Felt for Greater Efficiency
USE ONLY *General Filters* CARTRIDGES

Over a million users of General Fuel Oil Filters are proof of their greater efficiency. To retain peak efficiency, be sure you install a genuine General Filters replacement cartridge at least once each season.

Only General Filters gives you an all-wool cartridge which is impervious to water. Their "step back" design provides far greater surface area and consequently faster dirt absorption. The chemically treated, fine-mesh, wire-screen center core acts as a secondary filter and prevents any lint from getting to the burner nozzle. The uniformity of the felt eliminates any chance of channeling. Designed especially for gravity or pressure fuel oil burners, only GENERAL Filters gives you all these features. Get the best—they cost no more.

DOUBLE FILTER SECTION ASSURES TROUBLE FREE FLOW



SINGLE CENTER BOLT FOR QUICK CARTRIDGE REPLACEMENT

STEP BACK CONSTRUCTION PROVIDES GREATER SURFACE AREA

FINE MESH CHEMICALLY TREATED SCREEN ACTS AS SECONDARY FILTER

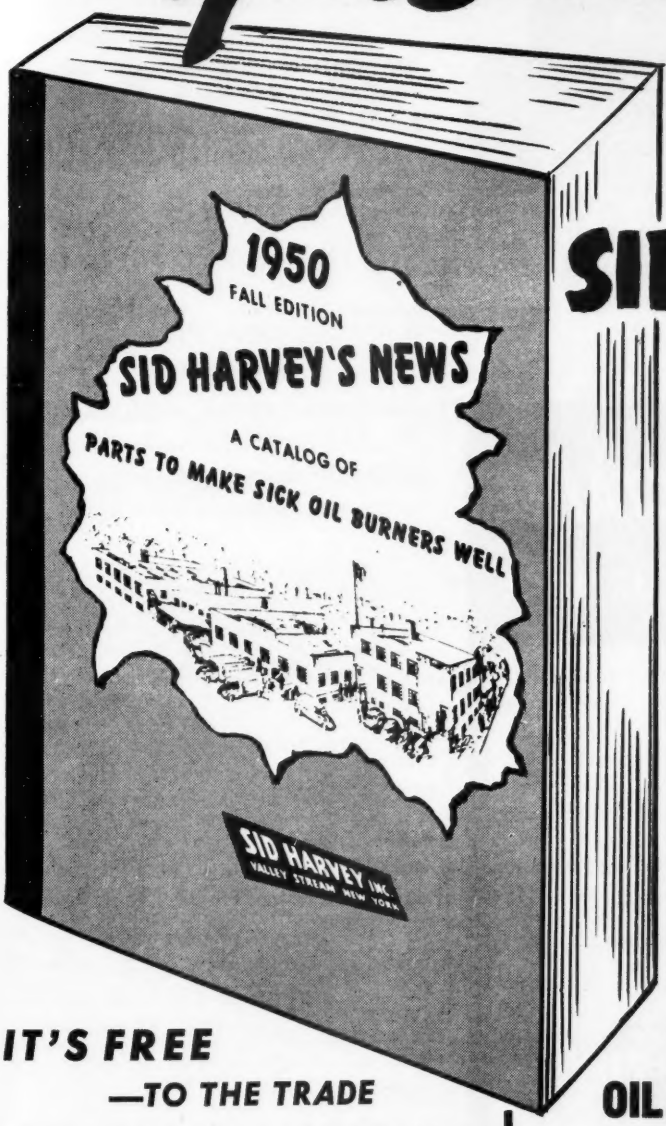
GENERAL FILTERS SAYS:

Do your customers a favor—see that they have a genuine replacement cartridge at least once each heating season.

GENERAL FILTERS INCORPORATED — GENERAL FUEL OIL FILTERS — 12890 WESTWOOD AVE. DETROIT 23, MICHIGAN

CANADIAN FACTORY BRANCH: CANADIAN GENERAL FILTERS, LTD., 2679 DANFORTH AVE., TORONTO

Your Service Department NEEDS THE NEW 1950 SID HARVEY'S NEWS



It's more than just a Catalog

It's the "BIBLE" of the Industry

204 PAGES
of Repair and Installation Parts for Automatic Heating
1135 ILLUSTRATIONS
13 Wiring Diagrams
10 Data Tables
and Information galore on NEW—OBSOLETE—and SID HARVEY REBUILT Parts

IT'S FREE
—TO THE TRADE

There is no obligation to buy anything from SID HARVEY'S in accepting this Catalog. SID HARVEY'S believes that when you see it, you will WANT to buy enough to make it worth-while for them. You will want everybody connected with the Service Department to be fully familiar with its invaluable contents. Limit: One copy to a firm. Extra copies: $2.00 each. Write on your letterhead.

ATTACH TO FIRM LETTERHEAD AND MAIL

SID HARVEY—

Please send ..... 1950 HARVEY'S NEWS as offered. Also put us on your mailing list.

Name .....

Position .....

Firm .....

Covering practically everything that is on any

OIL BURNER — GAS BURNER — STOKER

Arranged in table form by the functions of the part, with pertinent specifications, for ready comparison of capacity, dimensions, etc., with the trade price new, if available, and the trade price for rebuilding or exchange.

TURNS HEADACHES INTO PROFIT

The SID HARVEY Catalog shows you how to:

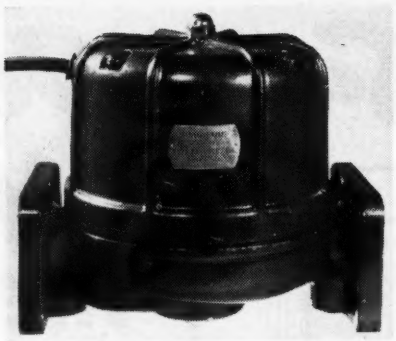
Reduce Inventory—Compare Products and Prices.
Select the correct Part—Reduce Lost Time.
Know what you are doing.

Any Service Department can be run better when they use the SID HARVEY Catalog.

SID HARVEY INC.
VALLEY STREAM, NEW YORK

fueloil & oil heat

Monopump Circulator of the Seal-Less, Oil-Less Type



A SEAL-LESS, OIL-LESS centrifugal pump, the Monopump, can be used for pumping any kind of fluid, including water and uses Graphitar bearings. When used for pumping oil, a standard bronze bearing is substituted. Three sizes, 1", 1¼" and 1½" are available in an aluminum model with flanges and a cast-iron model using unions. Capacity for the circulators is approximately 10 gpm at a 13 ft. head for the largest size. Units are recommended particularly for use with baseboard radiators and radiant heat installations where high head pressures are required.

Motor windings are hermetically sealed with a stainless diaphragm, with the rotor, for general use, cadmium plated or nickled. Removal of a bottom nut dismantles the pump, which can be taken apart, cleaned and reassembled in a matter of minutes. Rotor and impeller are combined in one part, with the rotor revolving on a stationary stainless steel shaft.

Made by: Mono Products, Inc., 810 North Hancock St., Philadelphia 23, Pa.

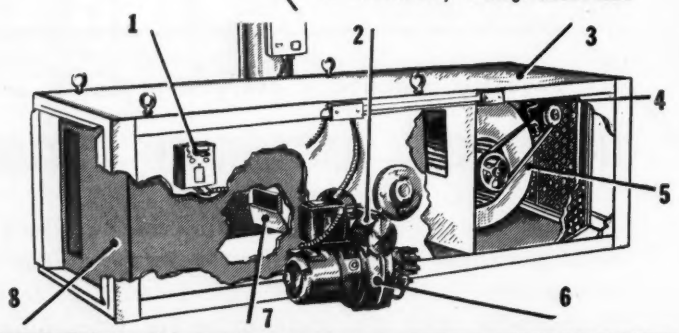
Profit with PERFECTAIRE

Oil-Fired SUSPENDED FURNACE

Supplement your Furnace line with this Versatile, Expertly-Engineered Horizontal Unit with

8 DEFINITE POINTS OF SUPERIORITY!

1. Adequate Safety Wiring
2. Easy to Service
3. Shipped as Packaged Unit
4. Resilient Mounted Motors
5. Quiet Operating Blower
6. Approved Oil Burner with Two-Stage Pump
7. Stainless Steel Combustion Chamber
8. Heater Body 12 Gauge Carbon Steel



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110,000 to 450,000

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Please send data on PERFECTAIRE Unit.
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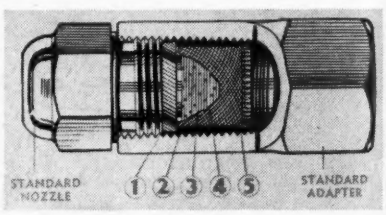
Hally cleanable Filter Replaces nozzle Strainer

A CLEANABLE FILTER, which screws into an oilburner nozzle and replaces the present strainer, consists of a strainer screen surrounding a stack of 13 rigid



grooved metal discs. These are spaced apart from .00075" in the smallest size to .003" in the largest size, all clamped tightly together. The filters are made in two models and four sizes, with the model used depending on the make of the nozzle in which it is to be inserted. No. 1 model is for .50 to .65 gph; No. 2, 1.20 to 1.65 gph and No. 3, 1.75 to 3.00 gph.

Each of the 13 discs contains 12 inlet and 12 outlet grooves. Dirt is separated from the oil and deposited in the inlet grooves and around the periphery of the filter stack. There are 156 feed grooves, plus the outer edges of the discs to trap dirt and lint particles.

Made by: Hally Mfg. Co., 2406 Arlington Ave., Racine, Wis.

Slant-Fin Radiators Offered in two Sizes

SLANT-FIN radiators, offered in 1¼" and 2" pipe sizes, are the same width and height of conventional fin radiators but have been designed to give 37% more radiation surface. This is accomplished by a slanted fin, secured to the pipe by a patented tempered steel flange. The flange expands and contracts with the pipe and, in addition, the flange on

Today, more than ever before, contractors are switching to MAID-O'-MIST automatic air valves, because —

MAID-O'-MIST AUTO-VENTS GIVE TOP PERFORMANCE

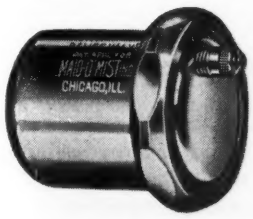
Here are the "Big 4" in MAID-O'-MIST'S line-up of fully automatic air valves for hot water heating systems

MAID-O'-MIST AUTO-VENT No. 7

The No. 7 Auto-Vent has features that have been proven in thousands of modern hot water heating systems. Self-closing, float controlled; the No. 7 is designed for venting of large mains, headers, unit heaters, radiant heating or anywhere that large venting capacity is required. No air chamber required. For vertical mounting only. Size 4⅜ x 2¼ with a ⅛" female connection.

MAID-O'-MIST AUTO-VENT No. 72

Ideal for the modern heating system with its forced circulation, smaller pipe, and faster circulation . . . because this is the fastest venting valve (expansion type) on the market. The No. 72 Auto-Vent is self-cleaning and its efficient operation is not affected by boiler seal or compound. Free standing radiators, cast iron or copper convector, steel, copper, or cast iron baseboard radiation . . . all vented quickly and regularly by the No. 72 with no air chamber required.



MAID-O'-MIST AUTO-VENT No. 27

The No. 27 Auto-Vent is a dependable float-operated valve. The construction and internal working parts are the same as the No. 7 Auto-Vent, but designed for horizontal mounting for the hard to get at places. The same large capacity as the No. 7. No air chamber required.

MAID-O'-MIST AUTO-VENT No. 67

Maid-O'-Mist No. 67 Auto-Vent automatically and continuously vents out the air that causes air binding, noise, gurgle and heating waste. Designed for limited space, this small self-closing, float-operated valve may be installed on convectors, baseboard radiation, radiant panels, headers and accumulators with no additional air chamber required.

MAID-O'-MIST Inc.
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AUTOMATIC HUMIDIFIERS . . . . . AUTO-VENTS
WATER LINE CONTROLS . HEATING SPECIALTIES

MAID-O'-MIST, Inc.

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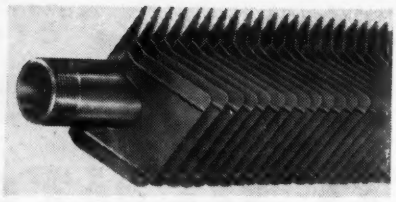


each fin interlocks with the fin ahead of it to preserve proper spacing and alignment.

At standard conditions of 1 lb. steam pressure and 70 degree room temperature, Slant-Fins are rated at 4¼ sq. ft. EDR per linear foot in the 1¼" size and 5¼ sq. ft. EDR per lineal foot in the 2" size. When used in forced hot water systems the ratings are reduced 33% at 180 degree and 15% at 200 degree water temperature. A complete line of enclosures is available.

Made by: Slant-Fin Radiator Corp., 5113-17—2nd Ave., Brooklyn 32, N. Y.

Perfectaire Furnace Unit Designed for Ceiling Suspension

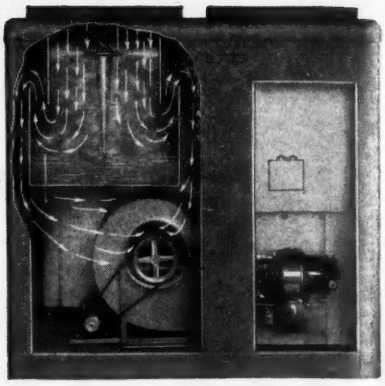
PERFECTAIRE oilfired furnace-burner units have been designed for ceiling suspension, and are available in three sizes, with capacities of 145,000, 280,000 and 450,000 Btu/hr at the outlet. The units are fired with high pressure oilburners and feature a heater body of 12 gauge carbon steel and a stainless steel combustion chamber. The burners employ a two-stage pump, and are equipped with a patented nozzle shield, designed to reduce carbon formations.

The units are factory assembled and internally wired. To prepare for installation it is necessary only to bolt on the burner, which is shipped separately with controls. The company, which offers other furnaces from 50,000 to 3,000,000 Btu capacity, points out the ceiling units can be adapted for temporary or emergency heating.

Made by: Air Conditioning Eng. Co., 44 First St., Cambridge 41, Mass.

Furnace-burner Units Incorporate air Washing

AIRWASHER furnace-burner units, in models rated at 80,000, 100,000 and 150,000 Btu output, incorporate an automatic air washing principle to remove dust, dirt and bacteria. Air is pulled



through the unit and in passing through is drawn through a heavy mist, in which the moisture laden foreign matter falls to the bottom of a container and remains trapped. The mist is created by a centrifugal cone pump installed in the water container, and into which the return air duct empties.

Models are offered for both gas and oilfiring, featuring large heating surfaces and baffled heat exchangers.

Other furnace units are available for utility room or basement installation, capacities 80,000 to 100,000 Btu.

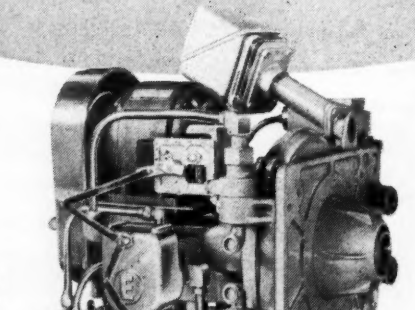
Made by: Airwasher Corp., Eaton Rapids, Mich.

ENTERPRISE

DEPENDABLE

horizontal rotary oil burners

Adaptable to efficient firing of both light and heavy oils, Enterprise Burners embody the most advanced design characteristics to be found in modern oil burners today. The outstanding success of thousands of Enterprise Burners, installed in virtually every type of heating application throughout the world, testifies to the quarter century of Enterprise engineering progress in combustion equipment. Write for full information, or contact your nearest Enterprise Distributor.



Enterprise V-Belt drive oil and combination oil-gas burners are built in 10 sizes. Capacities 4 to 200 gals. per hour; 12 to 650 boiler horsepower. Manual, semi-automatic and full automatic.

ENTERPRISE ENGINE & MACHINERY CO.

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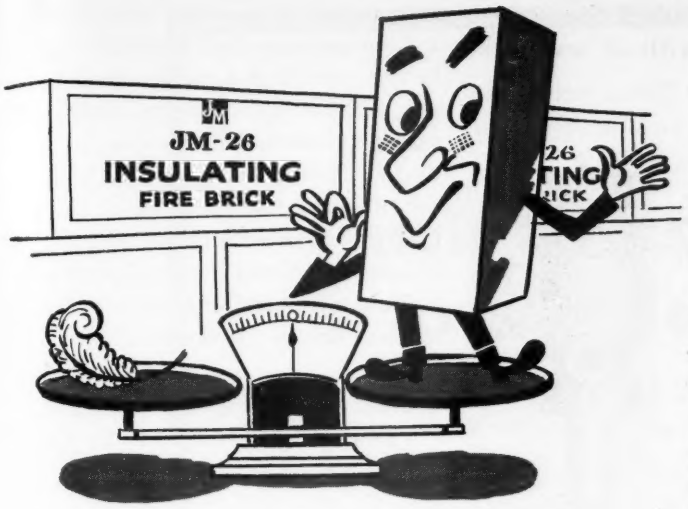
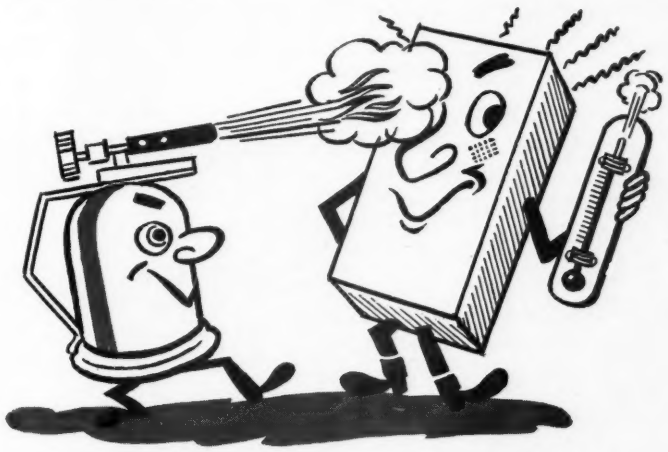
Enterprise Oil Burners



I'm a light-weight insulation . . .

installed as quick as a wink;



get the firebox hot in a hurry . . .

and cost a lot less than you think!

That's why Johns-Manville Insulating Fire Brick is a profit maker for you . . . a money saver for your customers

Oil burner men everywhere acclaim the ease with which square, round, oval or pear-shaped fireboxes can be built with light-weight J-M Insulating Fire Brick. Any desired cut or shape can be readily made with an ordinary hacksaw blade.

Then, for firm tight joints J-M Insulating Fire Brick is dipped into J-M 1626 Bonding Cement and rubbed into place. Spaces behind are filled with J-M Dobfill and the job is done.

Your customers benefit, too—Laboratory tests prove that J-M Insulating Fire Brick saves up to 10¢ on every dollar spent for fuel. That's because this brick provides the firebox with a skin-deep curtain of white-heat intensity within seconds. This speed in reaching peak operating efficiency does away with wasteful fuel burning required to heat up dense fire brick.

Use of J-M Insulating Fire Brick also results in far less soot, smoke and odor . . . in addition to much quieter oil burner operation.

Recommended J-M Insulating Fire Brick for oil burner fireboxes: JM-20, JM-23, JM-26, JM-28—and for industrial use, the new JM-3000. For further information see your J-M Distributor or write Johns-Manville, Box 290, New York 16, New York. In Canada, 199 Bay Street, Toronto, Ontario.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville INSULATING FIRE BRICK

"For Skin Heat in Seconds" in Fireboxes

fueloil & oil heat

NEW FILLING Z-I-P

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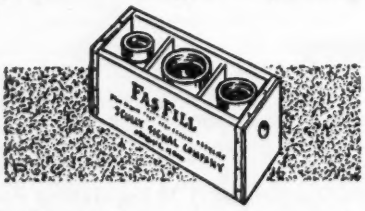
Simple hand-tight connection between Gun and Fill Pipe

$13.50 F.O.B. Factory

FASFILL saves time and money at every drop. Smoother, faster filling, yet never a blowback or fill drip. And FASFILL couldn't be easier to use. Every needed connection is at the driver's fingertips when he wants it. Easy hand turn puts it in place.

No buildups necessary. No tools involved. No matter if fill pipe threads are worn. Diaphragm and sealing point gaskets eliminate need for tightly threaded connecting joints.

Just shove gun nozzle through opening of flexible diaphragm in FASFILL head and let 'er go. Casing wall holds gun in position.



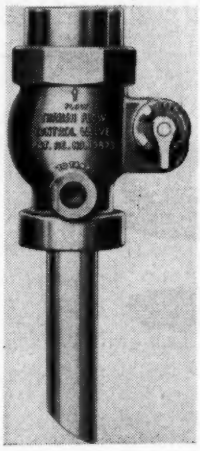
Light weight 3-compartment box carries ALL connections needed for making up to 1¼", 1½" or 2" male or female fill pipe.

SCULLY SIGNAL COMPANY
76 First Street
CAMBRIDGE 41, MASS.

FASFILL®

Thrush adds vertical flow Control Valve with air vent Tube

THE NEWLY ADDED Thrush vertical flow control valve with air vent tube is furnished in 1", 1¼", 1½" and 2" sizes, recommended for use on automatically fired forced circulating hot water systems. The valve assures positive air elimination from the top of hot water boilers and vents the air to the pressure tank where it serves a useful purpose.



The new models serve the same function as the angle models announced earlier this year; both types may be ordered with or without the vent tube. All vertical models have union outlet connection, the first three sizes being available with the union outlet for threaded or soldered connections.

Made by: H. A. Thrush & Co., Peru, Ind.

Uni-Flo Model EF Grille In Wide Range of Sizes

UNI-FLO fixed fin model EF supply grilles are adaptable to ventilating or air conditioning systems. The grille's diffusion fins impart a turbulent action to the supply air, minimizing drafts and producing rapid temperature equalization.

The grilles have a large free area for low noise level and minimum pressure drop and feature frames drilled for mounting screws. They are available in a wide range of sizes, delivered in a gray prime coat or electroplated metal finishes.

Made by: Barber-Coleman Co., Rockford, Ill.

Hydrafold Valve Simplifies Delivery Compartment Valving

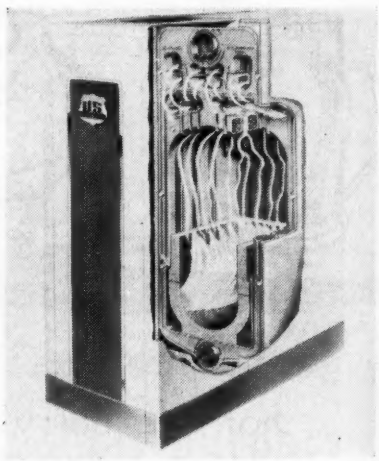
HYDRAFOLD VALVES, designed for use on truck-tanks carrying a variety of petroleum products, permits the use of present compartment selective systems, handling any desired grouping of compartments simultaneously. Valves are built with 2½" and 3½" flanged inlets, of light weight aluminum construction.

Contamination displacement is said to be less than ¾ of a pint in the smaller size, with hydraulic pressure distributed through seamless copper tubing for hydrafold operation and fusable elements for automatic shut-off in case of fire. By closing compartment doors, the hydraulic system is tripped and all valves closed.

Made by: Shand and Jurs Co., Carlton and Jurs St., Berkeley, Calif.

United States Radiator US-12 Boiler Available in Four Sizes

FOUR SIZES of the US-12 cast-iron boiler have been introduced, after more than three years of testing and development work. The boiler is described as being new in engineering and new in styling, with Lorin G. Miller, Dean of the engineering school of Michigan State College serving as a consultant and the styling being done by George W. Walker.



Fins and baffles are employed in the boiler, which can be furnished as an oil-fired boiler with or without an oilburner, or as a coal or gasfired boiler. It is available for steam or hot water heating.

Made by: United States Radiator Corp., 300 Buhl Bldg., Detroit 26, Mich.

General Controls V-110-1 Manual Reset Industrial Valve

THE V-110-1 manual reset valve for industrial applications may be opened or held in an open position only if electric power is applied to the operator. If current should fail while the valve is open, it will close immediately, with a trip-free mechanism preventing it from being opened or held open as long as an

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That's because Quaker City truck tanks give outstanding service. Hundreds of Quaker City tanks are still serving efficiently after 20 years of operation . . . still making money for their owners!

1,200 gallon stock truck tank. Our most popular standard model. Immediate delivery.

De luxe, custom-built, 1,000 gallon truck tank. We can build a truck tank to *your* individual specifications, whatever they may be.

STANDARD OR CUSTOM-BUILT MODELS OF ANY SIZE, TO MEET ANY REQUIREMENT. COMPETITIVE PRICES; PROMPT DELIVERIES.

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fueloil & oil heat

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FUEL OIL
FILTERS

Reduce Nuisance Calls—Boost Profits on Service Contracts

Cutaway view FRAM F1210

Filters the oil clean through an entirely new development • Removes dirt, rust, scale, water • Assures steady flow of clean oil to the burner • Protects pump valves and nozzles • Reduces service expense and needless, troublesome calls • Easy to install • Replacement cartridge builds repeat profits • Available in capacities of 2000, 4000, 6000 gallons of oil consumed per year. Send for complete details. Find out how you can profit with Fram.

FRAM FILTERS

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Providence 16, R. I.

Please send me complete details about Fram Fuel Oil Filters for Oil Heating.

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COMPANY_____

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unsafe condition exists. Resumption of current, additionally requires manual operation to restore fluid flow.

The valve operator is externally positioned, with an external arrow, connected to the valve stem, provided to show the valve seat position at all times. The V-110-1 also can be opened manually to any intermediate position between full open and full closed. Available is a special chain and sprocket attachment for ground control of overhead installations. Sizes range from ½" to 6" I.P.S., with explosion-proof or weather-proof models offered.

Made by: General Controls Co., 801 Allen Ave., Glendale 1, Calif.

Tri-Point Rock Drills With Cemented Carbide Tips

KENNAMETAL Tri-Point Rock Drills, in sizes of ⅜", ½", 9/16", ⅝" and ¾" for drilling to depths of 6" and ⅞" and 1" for depths to 10", are recommended for use in hard concrete, granite and similar hard nonmetallic construction materials.

The drills are tipped with thick, triangular-shaped inserts of Kennametal cemented carbide for longer service life in tough, abrasive materials. Drilling speeds up to 20% to 30% faster than with steel drills are possible.

Made by: Kennametal, Inc., Latrobe, Pa.

Fueloil Price Tables Available from Huggins

HUGGINS fueloil price tables have been compiled with separate charts covering prices from 9 to 15.9 cents, including all tenth and quarter cent gradations. Charts are available to show either a 2% or 3% tax on the selling price and plastic folders to hold the charts showing current prices also can be furnished.

Each tenth of a cent has its own chart, with individual calculations made for from 1 to 510 gallons. Four columns show the number of gallons, the amount at the selling price covered by the chart, the amount of tax to be added and the total selling price. Prices also are included for gallonages from 550 to 1000 in increments of 50 gallons. Charts are printed on durable, heavy paper stock.

Made by: J. R. Huggins, Three Rivers, Mich.

Accurate Answers demand Accurate Data

FOR PRECISE READINGS ON RELATIVE HUMIDITY and TEMPERATURE ...RELY ON BENDIX FRIEZ

Accurate checking of heating and air conditioning installations is essential to proper operation. And proper operation is, in turn, essential to comfort in the home and peak efficiency in many industrial operations. Bendix-Friez precision instruments, built to U. S. Weather Bureau standards, furnish the exact information that both the customer and the contractor need. Write for complete information.

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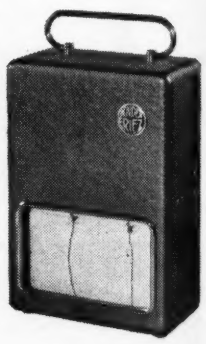
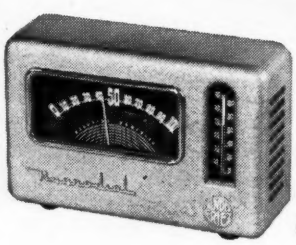
MODEL 160

Portable Humidity and Temperature Recorder

3" x 5" charts, 10 or 30 hour records. Modern design . . . handy for small space and difficult locations . . . built to meet unusual conditions.





BENDIX-FRIEZ

Hygrodial

Precision Humidity and Temperature Indicator

Hair-operated and calibrated to professional standards of accuracy by the maker of the world's finest weather instruments. Handsome, modern case—4" high, 5½" wide, 1⅝" deep—desk or wall mounting.

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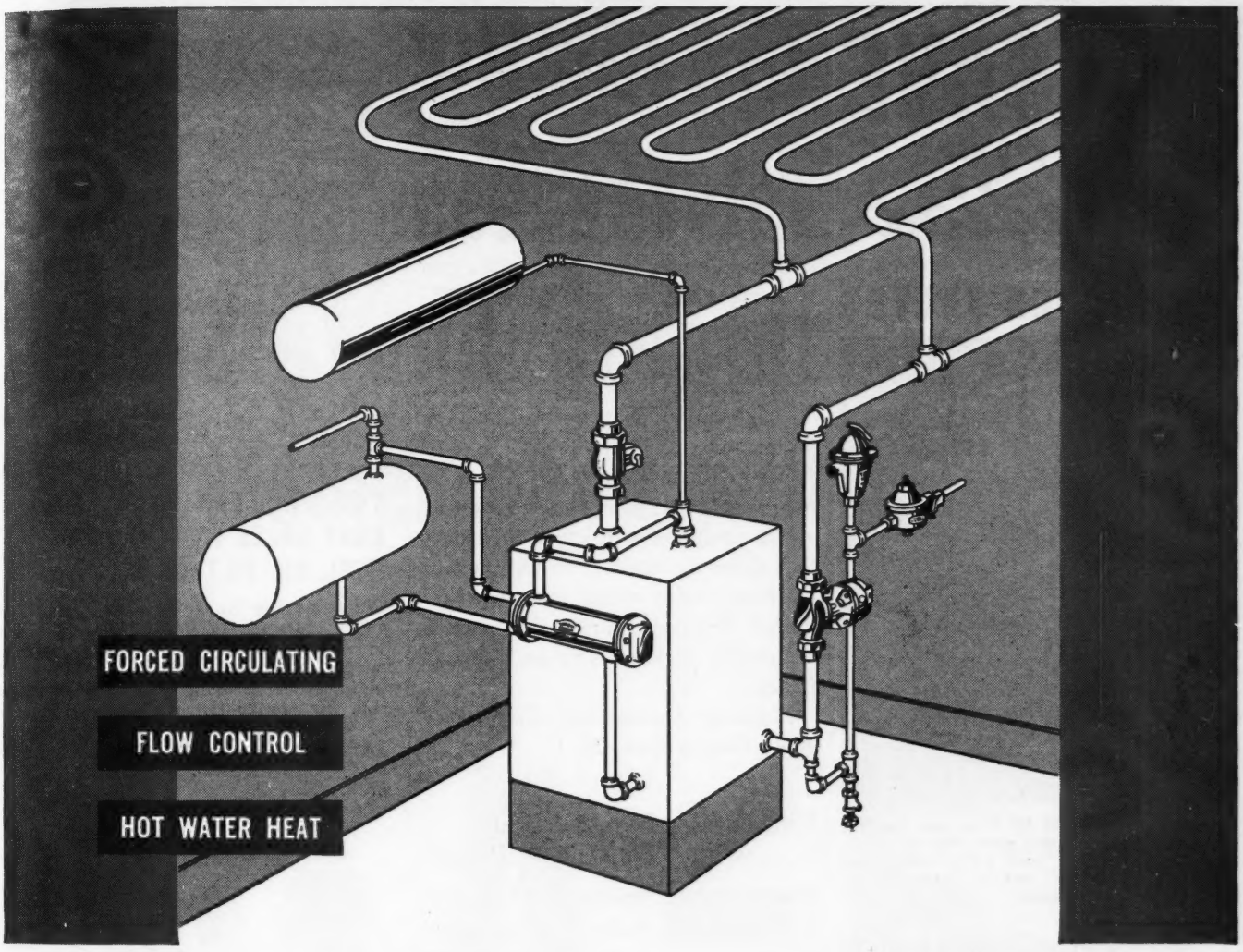
Baltimore 4, Maryland

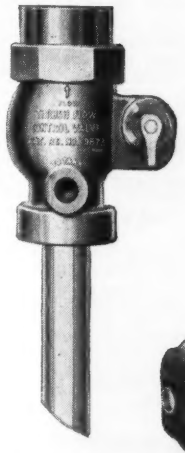
Bendix AVIATION CORPORATION

Export Sales: Bendix International Division
72 Fifth Avenue, New York 11, N. Y.



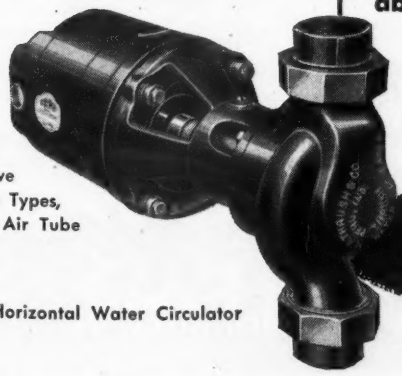
Thrush Radiant Heat

quiet, efficient low cost forced hot water circulation



Flow Control Valve
Vertical or Angle Types,
With or Without Air Tube

No. 201
Radiant Heat Control



Thrush Horizontal Water Circulator

GIVE YOUR customers the finest, most efficent Radiant Heat . . . Hot Water with Forced Circulating Thrush Flow Control System. It provides uniform heating without continuous Circulator operation. Maintains constant flow of radiant heat under all weather conditions. Summer-winter domestic hot water for kitchen, laundry and bath is provided automatically. Get our booklet giving the complete story of Thrush Radiant Hot Water Heat. Ask your wholesaler more about it or address Department C-10.

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HOT WATER CONTROLS

PERU, INDIANA

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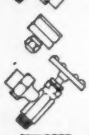
You SAVE
when you use
Guardian
OIL FILTER VALVES

No. 1200 Individual Tank Control Valve

No. 1900 Oil Filter and Constant Level Valve made with ⅜", ½", and ¾" inlet I.P.T. male thread and ⅜" and ½" outlet I.P.T. male thread.



No. 1300 Two Tank Control Valve Assembly

Another Guardian Original!

First produced by Guardian, this new oil filter valve has had a remarkable acceptance because it guarantees perfect installations in less time. Elimination of nipples and fittings reduces labor and parts costs. Fewer joints reduce the possibility of costly, troublesome leaks.

Guardian Oil Valves are precision machined from solid bar stock. Having no porosity, pin-hole leaks are absolutely eliminated. Other Guardian features: metal-to-metal seat for perfect closing and longer life, taper seat on body with radius on stem to prevent locking, adjustable packing nut with special J-M graphite-asbestos packing. All valves are tested under 250 lbs. pressure.

No. 1600 Underground Tank Valve

Dealers: Write for Name of Nearest Jobber.

No. 1400 Globe Valve for Oil, Water or Gas

Ask about Guardian Flexible Couplings. Over 4 million in use.

To be sure you get Guardian quality look for the name Guardian stamped on the body of the valve. All Guardian valves are GUARANTEED valves.

Guardian
PRODUCTS CORP.
VALVE DIVISION
DEPT. F-9, 1215 EAST SECOND STREET
Michigan City, Indiana

Ducane Furnace-Burner Unit Delivers 100,000 Btu at Bonnet

AN OILFIRED winter air conditioning unit, announced by Ducane Heating Corp., Lincoln Park, N. J., has been developed principally for ranch type houses and other applications where space is at a premium. Fired with a gun type oilburner, the unit delivers 100,000 Btu at the bonnet and features a 10" blower for forced circulation of heated air. Overall measurements are 20" wide, 56" high and 41" long, with a 17 x 24⅜ ins. plenum opening.

The Ducane Weather-Man can be used with or without return air ducts, and is equipped with knock-out panels that allow the installer to use right or left-hand return connections, when required. Shipped complete, the unit is completely enclosed with an insulated jacket.

Made by: Ducane Htg. Corp., Park Ave., Lincoln Park, N. J.

Vulcan Wet Base Vertical Water Tube Type Boilers

THREE SIZES of Vulcan west base, vertical water tube boilers have capacities of 320 sq. ft. steam, 510 sq. ft. hot water; 550 sq. ft. steam, 880 sq. ft. hot water and 1440 sq. ft. hot water radiation. Oilfiring rates range from 1 to 3 gph, with heating surfaces of 33, 42.3 and 70.3 for each model. A 3 gpm domestic water coil is furnished as standard equipment.

All heat transfer surfaces may be cleaned through access doors at the front and rear of the boilers, with the domestic coil also easily removable. Constructed of ASME design, all joints are double welded. A stainless steel combustion chamber is provided for oilfired models.

Made by: General Products Co., Fredericksburg, Va.

National Radiator Unit Heaters In Vertical, Horizontal Types

TWENTY-FOUR sizes of horizontal and 16 sizes of vertical models make up National Radiator's line of unit heaters. At 2 lbs. steam and 60° F. entering air temperature, the new models are rated from 25,900 to 360,000 Btu/hr for horizontal sizes; from 32,600 to 500,000 Btu/hr

HERE GOES OUR LAST *Klemm* FUEL OIL FILTER
CALL OUR JOBBER QUICK!

YOU, TOO, CAN MAKE EXTRA EASY SALES WITH KLEMM FUEL OIL FILTERS NOW

When serving your customers with Fuel Oil or cleaning their oil burners be quick to suggest a Klemm Fuel Oil Filter. Klemm Filters remove water, rust, and sediment of all kinds from oil . . . helps step up heating efficiency. Get a supply of Klemm Oil Filter units from your jobber TODAY. See for yourself how easily customers can be sold this highly profitable item.

Model 430 G

Klemm Oil Filters remove all water, dirt, sediment, rust, and all foreign matter from fuel oil . . . help make customers happy with the oil you sell. Metal bowl units listed Underwriters' Laboratories. All sizes available for every filtering need.

ORDER A SUPPLY FROM YOUR JOBBER TODAY

SILENT SALESMEN

Packed 12 to a carton, Klemm JR model oil filters take little counter space yet do a BIG job of selling themselves. Customers are attracted TO and buy direct FROM this attractive display carton.

ATTRACTIVE DISCOUNTS TO JOBBERS AND DISTRIBUTORS. WRITE FOR FULL DETAILS TODAY.

Klemm
AUTOMOTIVE PRODUCTS CO.
1718 N. Damen Ave., Chicago 47, Ill.

HAVE YOU CONSIDERED the reduced service costs and greater customer good will *with* FOA-5X

As one Shell Fuel Oil distributor after another totaled up his 1949-1950 account service costs, this fact was clearly established: FOA-5X brings a basic reduction in service-call expense.

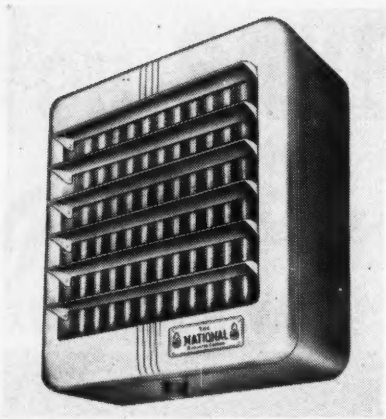
Even more important than reduced expense, however, is the increased customer good will which accompanies fewer service calls.

The development of the fuel oil that with normal summer maintenance won't clog filter screens is one more milestone in Shell's continuing program of Better Oil Heat . . . a program that has brought continuing benefits to consumer, dealer, and burner manufacturer alike.

SHELL

New SHELL FUEL OIL *with* FOA-5X

fuel oil & oil heat



for vertical types. Fourteen other units are designed to deliver air at low temperatures with high temperature steam.

Both standard and heavy duty, seamless copper tubing cores are available, with rippled aluminum fins bonded by a hydraulic expansion of the copper tubes. Fans are propeller type and motors are made specifically for fan duty. The company offers anemostats and diffusers for vertical models and controls, including thermostats, speed controllers, starters and limit controls.

Made by: National Radiator Co., Johnstown, Pa.

Photoswitch Series No. 20 For Motor or Valve Control

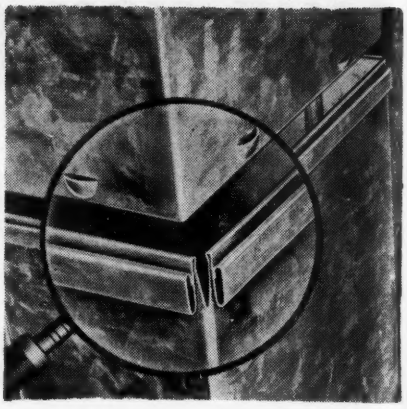
SERIES 20, general purpose photoelectric control, developed by Photoswitch Inc., Cambridge 42, Mass., is designed for general industrial applications, including control of motors and valves. It is designed for high speed operation, its relay functioning with 1/20th of a second.

Operating from 115 and 230 volt supplies, series 20 controls can be furnished with the phototube integral with the control or located in a separate small housing for use where space is limited. A tamper-proof sensitivity adjustment permits operation over varying distances between phototube and light source.

Made by: Photoswitch, Inc., 77 Broadway, Cambridge 42, Mass

Adelta Snap-Lock Cleat Is Integral Part of Duct

THE ADELTA ONE-PIECE, snap-lock cleat is formed as an integral part of the duct, is not crimped, riveted, punched or welded on, and is supplied on all four sides of Adelta fittings. The cleats have



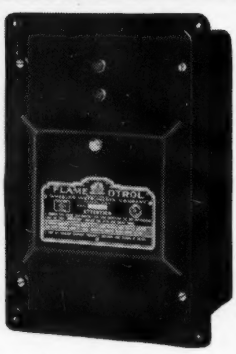
a tapered leading edge. To assemble it is necessary only to push the seams into place. The result is a rigid, leak-proof joint, made without tools or fastening devices. Fittings are machine-made and die-cut for uniformity of size.

To introduce the snap-lock cleat, the company has brought out the "Adelta Trunk Line," 4-page booklet to be published six times a year. Available free on request, the "Trunk Line" also will serve to familiarize dealers with the complete line of standardized ducts and fittings that are offered.

Made by: Adelta Mfg. Co., 21st & Ellsworth Sts., Philadelphia 46, Pa.

instrumentality

DON'T PLAY WITH FIRE... specify FLAME-OTROL



Approved by Associated Factory Mutual Laboratories

Underwriters Laboratories

You can't afford to have less than the best in combustion safety. Specify the new Wheelco 1300 Flame-otrol—a compact completely engineered package with all these advantages—Instantaneous protection... waiting period not subject to human error...shut down or repeat of "lighting-off" cycle at operator's discretion...automatic check of all internal components to insure safe "lighting-off"...selective and adjustable timing programs for ignition cycles, purging and preventilating...constant visual indication of burner system operation...

Write for Bulletin F2-2, Wheelco Instruments Company, 888 W. Harrison Street, Chicago, Illinois.

wheelco electronic controls

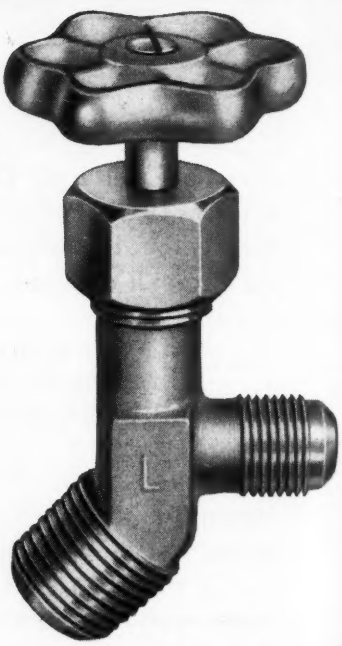
★ LINCOLN MASTERLINE ★

SERIES 5365

OIL TANK VALVE

(ANGLE TYPE)

Furnished in flared ⅜" or ½" outlet ends and ½" or ¾" tapered pipe thread inlet.



Write for further information

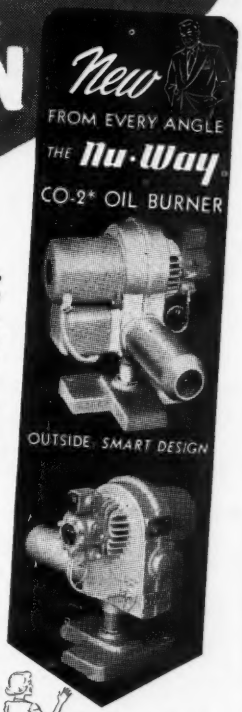
LINCOLN BRASS WORKS, INC.

2051 12TH STREET · DETROIT 16, MICH.

ADDED TOGETHER FOR

MORE PROFITS!

Nu-Way MODEL CO-2 plus REAL SALES PROMOTION



NATIONAL ADVERTISING — Smart, informative Nu-Way ads like the one here are appearing regularly in America's leading home publications* to tell simply and clearly why the new Model CO-2 Nu-Way Oil Burner is the best when converting to oil or replacing an outmoded burner. These ads will go to over six million families . . . creating interest and sales demands for Nu-Way Oil Burners.

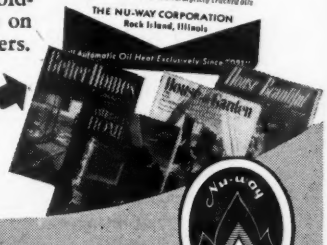
LOCAL PROMOTION — Nu-Way offers a host of material for local advertising designed to help bring the Nu-Way story right to your local market area. The Model CO-2 campaign is complete with newspaper ad mats, window streamers, radio spot announcements, colorful four-page folder and an eight-page booklet that uses facts and illustrations to tell the entire Nu-Way story in a precise, thorough manner.

ABOUT THE NEW MODEL CO-2 — The Nu-Way Model CO-2 is designed to burn the new catalytically cracked oils and is the result of two years of research and offers the latest in economy, convenience and efficiency. You'll make more profit and more satisfied sales when you feature the new, outstanding Nu-Way Model CO-2 Oil Burner.

WRITE TODAY — for new folder containing complete details on the Nu-Way line of Oil Burners.

INSIDE: 7 NEW FEATURES
FOR CLEAN, ECONOMICAL, CONVENIENT HEAT
● EFFICIENCY—new combustion head designed to burn modern catalyticly cracked oils.
● CLEANLINESS—new accurate method of flame control prevents soot formation.
● ECONOMY—Patented Shielded Nozzle holds fuel consumption at a low level all season.
● POSITIVE AIR CONTROL with dial setting for top over-all efficiency—exclusive Nu-Way design.
● LIFETIME LUBRICATED BALL-BEARING MOTOR.
● QUIET OPERATION—moving parts dynamically and statically balanced.
● NO RADIO INTERFERENCE—new patented transformer completely eliminates static.
Remember when you convert to oil or replace an outmoded burner . . . Nu-Way offers you the latest in efficiency, economy and convenience. The Nu-Way CO-2*—result of more than two years research and testing—is sold through your local heating contractor.
*Designed to burn the new catalyticly cracked oils
THE NU-WAY CORPORATION
Rock Island, Illinois
"Automatic Oil Heat Exclusively Since 1921"

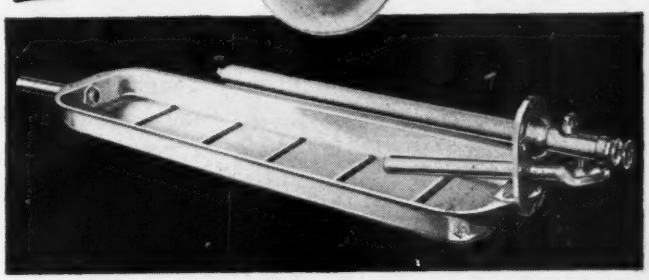
*Ads like this are appearing in Better Homes & Gardens, House Beautiful, American Home and House & Gardens right now!



THE *Nu-Way* CORPORATION
Rock Island, Illinois
OIL HEATING EQUIPMENT

Sold Through Jobbers and Distributors
Also Special Applications for Furnace and Boiler Manufacturers
"AUTOMATIC OIL HEAT EXCLUSIVELY SINCE 1921"

EACH DROP OF WATER VAPORIZES AS IT HITS HEATED PAN!



THERMO DRIP *Automatic* HUMIDIFIER

Water drips—AT PRE-SELECTED SPEED—into fast-heating, stainless steel pan. Drip feed principle gives almost immediate vaporization—makes a much more efficient working humidifier.

There is never a stagnant pool of water to reheat before vaporization begins—only a thin film of water ever forms in pan.

These features assure superior performance at LESS COST!

SUPER-SENSITIVE THERMOSTAT
Fool-proof. Starts or stops the flow of water according to bonnet temperature.

OUTSIDE SCREW ADJUSTER
Easy to regulate. Fingertip control.

12 PAN SIZES
Installs quickly—easily in every type warm air furnace.

1 KIT TO PURCHASE
NEW, IMPROVED AIR-TIGHT VALVE ORIFICE
Has positive seating action.

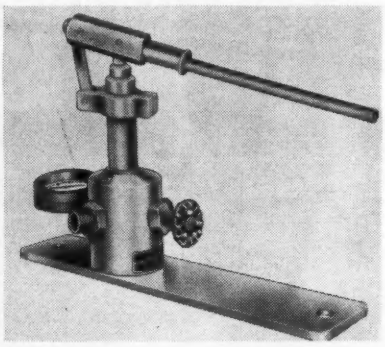
DRIP FEED PRINCIPLE
Water does not spray or run—Passes through funneled orifice.

WRITE TODAY FOR *FREE* LITERATURE. DEPT. F-10

Automatic Humidifier Co.
CEDAR FALLS, IOWA

Capitol Hydrastatic Test Pump For Radiant Heating Systems

MODEL NO. 6-V hydrostatic test pump permits testing for leakage in radiant heating systems, or copper tube piping systems, before the job is completed.



Testing with hot or cold water, the pump will check systems up to 1000 lb. maximum pressure, with an average from 400 to 600 lbs. for most systems.

Fittings are standard ¾" hose intake connection, ¾" I.P.S. male discharge fittings. The pump is self-contained, all check valves enclosed in 3" aluminum body, with a shut-off valve in the base of the pump to lock pressure in the system and a gauge to indicate pressure. If water is not available from city supply, No. 6-V will pull water from any container used.

Made by: Capitol Machine Works, 424—7th St., Oakland, Calif.

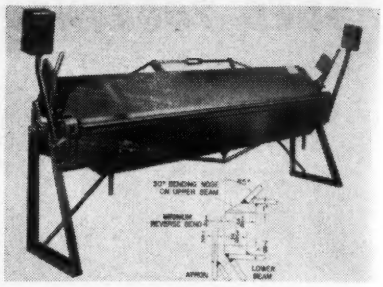
Midget air vent Valve For hot water Applications

MIDGET air vent valves for hot water applications are offered in 1, 2 and 3 orifice types, for use with pressures from 2 to 125 lbs. psi. The one orifice type covers a range from 2 to 125 lbs. psi, discharging a maximum of 7.85 cfm; 2 orifice types are usable with pressures up to 70 lbs. psi for discharging a maximum or 9.52 cfm and 3 orifice models, for pressures up to 45 lbs. psi, discharging up to 10.08 cfm.

Made by: Multiplex Mfg. Co., Berwick, Pa.

Whitney Bending Brakes For Straight Bending Only

OFFERED in sizes from 4' through 10', 18 through 12 gauge capacities, a new line of bending brakes is limited to straight bending only. The models are simplified and strengthened in construction, including triangular box sections on upper and lower beams and apron, stiffened with rod trusses. By removing the inset plate on the apron, reverse bends as close as ¼" can be made.



Clamp mechanism and apron pivots are identical on all models, facilitating replacement.

Made by: Whitney Metal Tool Co., 91 Forbes St., Rockford, Ill.

York Adds Three Sizes Of PBOE Model Boiler Units

OIL OR GAS FIRING is possible with the new York-Heat PBOE model boiler-burner units, available for 300, 400 and 550 sq. ft. of steam radiation and equivalent hot water. Units feature an oval extended jacket, with its right side

DELAVAN

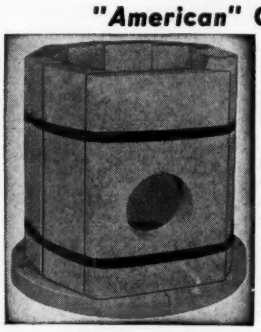
SLUDGE SOLVENT

USE IT WITH SUMMER FILLS

Summer is the time when sludge settles out of oil; gums up tanks, lines and strainers. Use Delavan Sludge Solvent with summer fills to assure a clean, sludge-free burner this fall. A real profit item. Write for Bulletin No. 248.

DELAVAN MANUFACTURING CO.
3009 SIXTH AVE., DES MOINES 13, IOWA

FOR BETTER HEATING
"American" Combustion Chambers



American chambers for domestic oil burners are recognized for these features:

BETTER PERFORMANCE — American light weight refractory chambers give you fast heat-up, quiet operation and fuel savings that mean satisfied customers.

HIGH QUALITY—Only high grade refractories built to withstand 2500° operating temperatures are used.

EASY INSTALLATION—Controlled manufacturing and careful design give you flexible pieces that fit together with a minimum of effort.

We invite your inquiries on standard or special shapes.

THE AMERICAN CLAY FORMING COMPANY
TIFFIN, OHIO
Twenty-seven years making quality refractories for the heating industry.

NOT A CRUTCH

At our rates, we cannot make risky loans as a crutch to the ailing business.

Only where management is competent and reliable and can increase sales and profits by way of our loans are we willing to offer our services.

Most of our customers earn more in purchase discounts than they pay us for our revolving loan on their receivables.

Write for descriptive circulars

LEXINGTON CORPORATION
M. S. Lurio, Pres.
Fuel Financing from Maine to Maryland
10 Milk Street, Boston, Mass.
Baltimore, Md. New York, N. Y.

GORTON VALVES

ARE QUICK VENTING

THE SOLUTION TO STEAM HEATING PROBLEMS

For Steam Mains and Unit Heaters

For Radiators

WRITE TODAY FOR LITERATURE AND PRICES

GORTON HEATING CORPORATION
Since 1887 Manufacturers of Heating Equipment
CRANFORD NEW JERSEY

MORE OIL BURNER ACCESSORIES *by Buckeye*

Those two words, "By Buckeye," are a familiar guarantee of thoughtful engineering and good construction; the performance and long life your dollars should buy. Pictured here are a few of the many items that make up the Buckeye complete line of Oil Burner Accessories.

No. 623 Flush Fill Box
Sturdy but light, cast iron body, brass lid. Made in 2" size for fuel oil installations.

No. 440 Vented Fill Cap
Heavy cast iron. Extension arm on body quickly locates cap for padlocking. Removable vented cap.

No. 628 Hinged Vented Fill Cap
Heavy iron. Used when fill pipe extends above surface. Hinged cap can be locked.

No. 714A Sludge Pump
All brass with malleable iron handle. Easy to operate at any angle without a foot valve. Expels about 1 pint per stroke.

No. 631 Double-Opening T Vent
Each opening has brass fire screen protected by a heavy galvanized hardware cloth.

For oil burner installations, Buckeye also makes foot valves, bushings, strainers, check valves and shut-off valves.

BUCKEYE IRON & BRASS WORKS, Dept. F
P. O. Box 883, Dayton 1, Ohio

Because they're years ahead in steam generation...

only CYCLOTHERM *STEAM GENERATORS*

Trade Mark Reg.

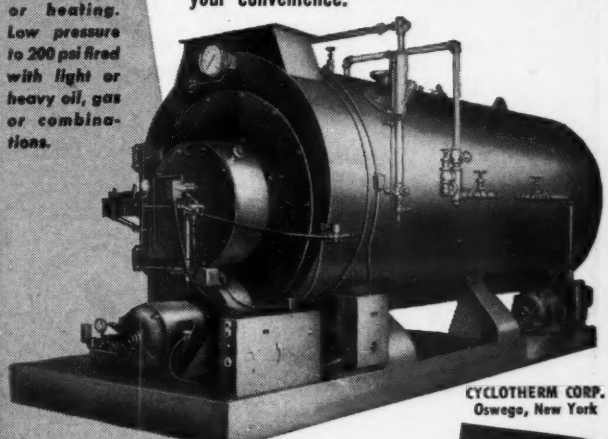
HAVE the REAL ANSWER TO *Low* GAS and OIL CONSUMPTION

***WHAT IS IT?** It's the modern scientific discovery of transferring heat at the highest degree of efficiency with a new low in fuel consumption. Principal factors of which are the cylinderized solid flame with its exclusive cyclo-motion power, designed to utilize the full potential of every particle of fuel . . . and the thin layer of air resulting from centrifugal force that's always between the flame and wall of combustion chamber. A combination to produce steam far in excess of conventional standards for measured heating surfaces.

SEND FOR *ALL* THE BIG REASONS

Learn how the completely automatic Cyclotherm with its unexcelled all-in-one package type features wipe out waste and excess costs. If you are planning a new or replacement boiler installation it will pay you to first get the facts on Cyclotherm. The coupon below is for your convenience.

***SIZES** available to fit your steam or water load for processing or heating. Low pressure to 200 psi fired with light or heavy oil, gas or combinations.*



CYCLOTHERM CORP.
Oswego, New York

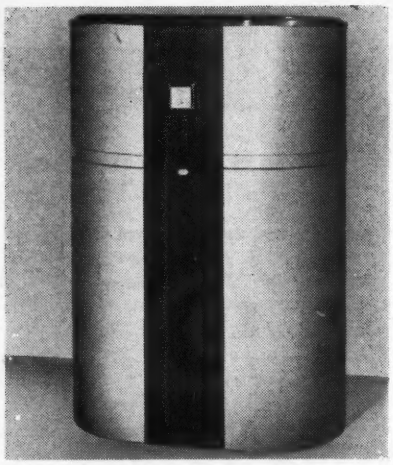
CYCLOTHERM CORP., OSWEGO, N. Y.

Gentlemen: Please send me bulletin H-1 showing the advantages of Cyclotherm's new concept in Heat Transfer. Without obligation, of course. Dept. FO-10

NAME _____

ADDRESS _____

CITY _____ **ZONE** ____ **STATE** _____



redesigned so that the controls and burner section are more easily accessible. The oilburner, a high pressure atomizing type, is equipped with the Iris Shutter.

Made by: York-Shipley, Inc., York, Pa.

Wade ShokStop Air Chambers Employ Sealed Metal Bellows

FIVE SIZES of ShokStop sealed air chambers are offered for curing water hammer in piping. The units feature a cushion of air sealed in a metal bellows, made of beryllium copper flanges welded to each other around the inner and outer perimeters by an exclusive welding process. The bellows, located in a heavy, galvanized spun-steel housing, contracts when subjected to water hammer and absorbs the shock. When the water hammer force recedes, the sealed air decompresses and distends the bellows to its normal position.

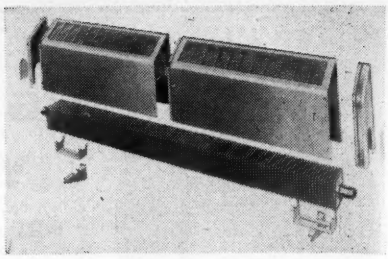
The company reports tests in which the bellows have withstood more than 69 million cycles of operation, equivalent to several lifetimes of ordinary use.

Made by: Wade Mfg. Co., Elgin, Ill.

Trane Wall-Fin Type Radiation In Standard Lengths Up to 12 Ft.

WALL-FIN type radiation, developed by Trane Co., LaCrosse, Wis., for commercial and industrial applications, is offered with steel pipe or non-ferrous heating elements in standard lengths from 2 to 12 ft. in 6" increments. Cabinets run from 2 to 6 ft. in 6" increments, grilles from 2 to 10 ft. in 6" increments.

Design features include cabinets that lock together with push-in rivets, a new hanger that rides with expansion and contraction of the heating element.



Wall-fin radiation is recommended to provide "high spot" heating around points of high heat loss in industrial applications and, in schools and commercial installations.

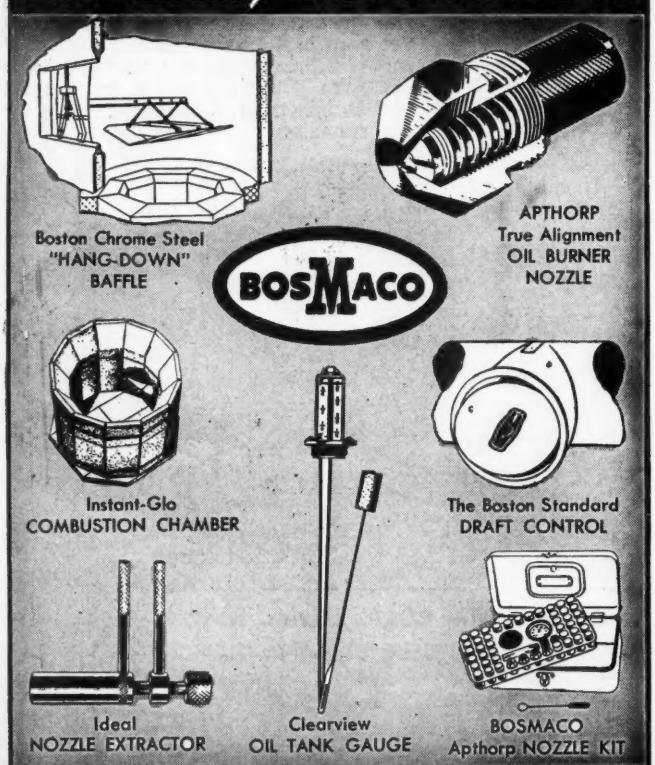
Made by: Trane Co., La Crosse, Wis.

Stop-Fire extinguishers Incorporate a safety Port

STOP-FIRE soda-acid and foam 2½ gal. fire extinguishers incorporate a safety port, consisting of a removable discharge elbow to permit inspection for clogging, plus an extra-dimensional inner screen. A 500 lb. test seamless shell drawn from single piece brass, government specification bottle cage, replaceable hanger handle and bridged operating grip are other features.

Made by: Stop-Fire, Inc., 125 Ashland Pl., Brooklyn 1, N. Y.

FOR Quality INSTALLATIONS



WRITE FOR COMPLETE INFORMATION

BOSTON MACHINE WORKS COMPANY

Oil Heating Supplies Division, Manufacturers, Lynn, Mass.

NEW PREFERRED Anti-Syphon VALVE

APPROVED BY UNDERWRITERS' LABORATORIES FOR NO. 6 OIL

Here's a new and important development in anti-syphon valves . . . Preferred's Type A Valve, which is the only valve available in these sizes approved by Underwriters' Laboratories for use with No. 6 oil, as well as with lighter oils. This angle type valve takes the place of an elbow when installed at the high point in the suction line, usually at the building wall, where the line drops to the basement floor.

- Built-in dashpot eliminates chattering.
- The new Preferred Type A valve is spring-loaded and is available in 1¼", 1½" and 2" sizes for 5 or 10-foot head pressures.
- For Oils Up To No. 5—Valves C5 and C10 are available in ⅜" and ½" sizes.
- For Oils Up to and Including No. 5—Valves B5 and B10 are available in ¾" and 1" sizes. (1" size is built up from ¾" size with fittings.)

PR 188

PREFERRED UTILITIES MFG. CORP.

1860 BROADWAY, NEW YORK 23, N. Y.

BOOK SHELF

INSTALLING THE DOMESTIC OILBURNER

This is the first practical guide on oilburner installation. It contains the most significant articles from FUELOIL & OIL HEAT that cover all phases of installation step by step. It is 8½ by 11 inches and contains 64 pages. Illustrated with numerous diagrams, charts and photos.

$1.

OILHEATING SNAGS

This book gives the solutions to many of the Everyday Snags that annoy you in installation and service. We've been working on them for years. They are all simple and practical answers to the most common goat-getters on jobs. It's an 8½ by 11 inch book of 64 pages.

$1.

Because of the thousands of small orders we receive we ask that cash, stamps, money orders or checks be sent with all orders.

HEATING PUBLISHERS, Inc.

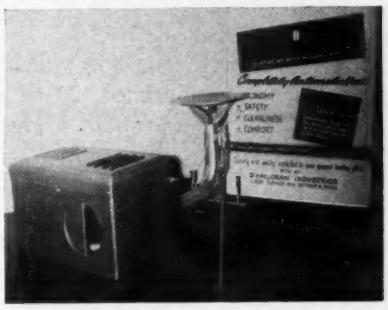
232 Madison Ave. **New York 16, N. Y.**

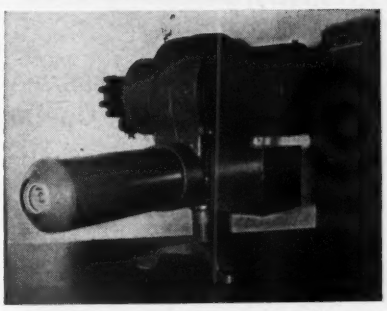
DEALERS:

IT WILL PAY YOU TO INVESTIGATE . . .

THERM-O-BLAST

GAS AND OIL BURNERS





New Dealers Wanted Everywhere to handle highly competitive Gas and Oil conversion burners, Gas fired and Oil fired furnaces.

Enjoy the extra advantages of dealing with one manufacturer for complete line of heating equipment.

THE THERM-O-BLAST GAS CONVERSION BURNER

A.G.A. Approval • Customer Guarantee • Safe, Simple, Dependable • Modern Design and Engineering • Competitively Priced.

THE THERM-O-BLAST OIL CONVERSION BURNER

Shell Combustion Head • Underwriters Lab. Approval • Easy Adjustments • High Efficiency (80 to 83%) • Competitively Priced.

SEND FOR FURTHER INFORMATION AND PRICES TODAY!!

O'HALLORAN INDUSTRIES 12305 TURNER AVE. DETROIT 4, MICH.

U/L approved

BETTER CHEAPER

A Low-Pressure burner with 22 less parts than any other, takes much less power to run. Better atomization at 1 to 2 pounds pressure.

Easy to install. Any good service man can service, not necessary to attend special service schools.

Air and oil mix in nozzle, Patented feature prevents change in flame density. Airflame cone drives fan air to center of oil mist. Lifts own fuel from buried tanks.

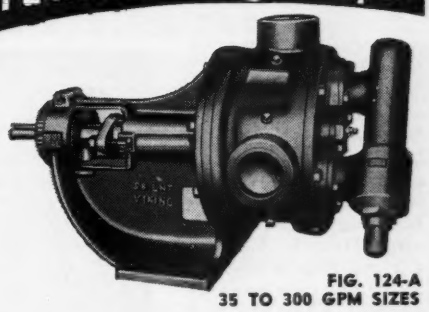
Franchises to local installers or to state distributors.

AIRFLAME, INCORPORATED

648 McAlister Ave. **Waukegan, Illinois**

IF IT'S SERVICE YOU WANT!

Specify... **VIKING Truck Mounting Pumps**



For rugged, year-in and year-out truck pump service, check the features of the Fig. 124 Viking pump.

FIG. 124-A
35 TO 300 GPM SIZES

1. **Integral thrust bearing — controls distortion and end play.**
2. **Extra long stuffing box — leak resistant.**
3. **Revolvable casing for handy port location.**
4. **Double supported relief valve on head.**
5. **Pump operates equally well in either direction.**
6. **Positive, *fast* self-priming. No pulsation.**

Write today for latest free bulletin 1507EE. Sent promptly on request.

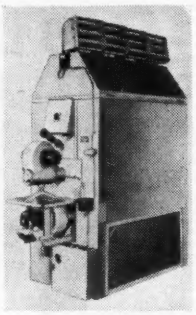
VIKING AN HONORED NAME IN PUMPING

See Our Catalog in SWEETS

Viking PUMP COMPANY Cedar Falls, Iowa

Olson Series 50 Industrial Type Warm Air Heating Units

OLSON series 50 industrial type warm air heaters have been designed primarily for heating and ventilating of industrial and commercial buildings, but can be used also for process work and make-up air applications. Available in capacities from 300,000 to 2,000,000 Btu/hr for oil, gas or LP gas firing, stokerfired models have capacities from 500,000 to 2,000,000 Btu/hr and large central type heaters range from 2,500,000 to 6,000,000 Btu/hr with any kind of fuel.



Improvements have been incorporated on the control panel, induced draft fan and external design. Units may be floor mounted or ceiling suspended and feature large areas of heat transfer surfaces with long 4-pass gas travel. Bearings are mounted outside of the heater.

Made by: Arthur A. Olson & Co., Canfield, Ohio.

Hypro Portable Pump Delivers Up to 5 Gpm

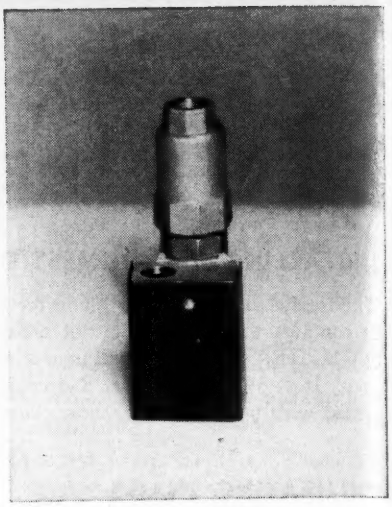
HYPRO PORTABLE PUMPS, recommended for draining oil drums, cellars and similar applications, consist of a 1/4 hp heavy duty motor, a 5′ cord, self-lubricating pump and a hinged metal handle. The pump has a hollow shaft which slips directly on the motor shaft.

The unit will lift water up to 10 ft. unprimed, 22 ft. primed and will deliver up to 5 gpm. It weighs only 27 lbs. and used standard garden hose fittings.

Made by: Hypro Eng., Inc., 404 Washington Ave. North, Minneapolis, Minn.

G. E. Electric Control Operated by Water Flow

A FLOW INTERLOCK, developed by General Electric Co., Schenectady 5, N. Y., is a control device which responds to a flow of cold water to open or close an electrical contact. Described as useful in many applications, including hot water heaters, the flow interlock closes a contact when a flow of water exceeds a preset amount and opens it when the flow falls below the preset amount. Measuring 2½ x 3 x 7 ins., adjustment is possible to control the circuit for any flow from 1 to 4 gpm, with a flow differential between cut-in and cut-out of .2 gal. minimum to .4 gal. maximum. It does not control the amount of water flow, but this can be accomplished by addition of a throttling or regulating valve.

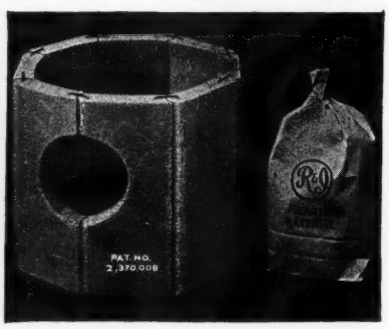


Made by: General Electric Co., River Rd., Schenectady 5, N. Y.

All in ONE Package

Everything you need to do a complete job in one strong carton.

When you get the Standard R & I Combustion Chamber there are eight refractory side segments, metal bonding clips, strap, and Hearth Cement for pouring a floor—all in one easy-to-carry carton. The clips and strap hold the segments in place and speed up installation.



NO EXTRAS NEEDED!

You'll like the convenience of the standard R & I Chamber package, suitable for use on any job burning 1 gal. to 1.65 g.p.h.

Your supply house has it. Write us for Bulletin OB-101.

R&I **REFRACTORY & INSULATION CORP.**

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Chicago 4, Ill. Newark 2, N. J. Philadelphia 2, Pa. Cleveland 15, Ohio

Combustion Chamber

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A NEW, LOW PRICED

Skinner* drip-eliminator or shut-off *Valve

for better oil burner service!

Model V2-100

You can't beat the NEW V2-100 Solenoid Valve for dependability on original burner equipment or for service satisfaction. This very compact valve has such quality features as sturdy steel construction with all parts plated to resist corrosion — soft synthetic seat and seals to prevent leakage — spring loading for positive closing — *no* brazed, welded or soldered pressure *joints* — usable in any position — weight, only 9 oz. Maximum pressure is 125 p.s.i. The NEW V2-100 is two-way, normally closed, rated at 10 watts maximum and is Underwriters' approved.

Write for details and low prices!

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***Skinner* ELECTRIC VALVE DIV.**

THE SKINNER CHUCK COMPANY

141 Belden Ave., Norwalk, Conn.

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GRAND RAPIDS FURNACE CLEANER

Act Now! Get in on this year's cleaning profits. *Order a Grand Rapids Furnace Cleaner.*

IT'S FAST— Handles twice as many jobs as the ordinary furnace cleaner.

IT'S THOROUGH — High velocity suction completely removes ashes, soot, scale and dirt from every type of heating plant.

IT'S COMPLETE — A packaged unit with practical cleaning attachments designed for fast, easy cleaning.

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Send today for complete information about the Grand Rapids Furnace Cleaner.

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SWIRLING ACTION

Controls Stack Heat Loss—

Pat. Pend.

FIRE-SWIRL controls stack loss by using the upsurge of hot gases from the combustion chamber.

HERE'S HOW—The impeller blades of FIRE-SWIRL act upon the upward rushing hot gases, swirling them around and around the furnace or boiler walls. This swirling turbulance, scrubs away the film of *stagnant gases**, resulting in a far greater heat transfer and lower stack temperature.

**A major cause of excessive stack temperature and general inefficiency of conversions.*

FIRE-SWIRL improves the efficiency of any heating plant, oil, gas or coal. FIRE-SWIRL, constructed of malleable cast iron, is a superior baffle, easy to install and low cost.

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We Invite Your Inquiry

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FIRE-SWIRL

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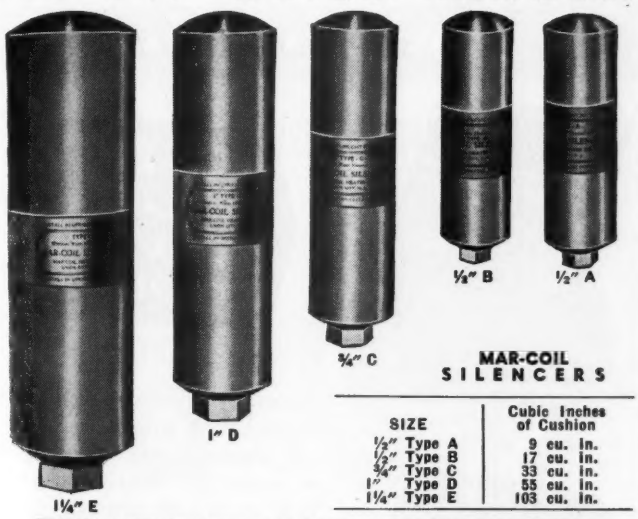
PASSAIC 3, N. J.

MAR-COIL SILENCERS

PREVENT WATER HAMMER!



MAR-COIL SILENCERS

SIZE	Cubic Inches of Cushion
½" Type A	9 cu. in.
½" Type B	17 cu. in.
¾" Type C	33 cu. in.
1" Type D	55 cu. in.
1¼" Type E	103 cu. in.

ELIMINATES WATER HAMMER FROM HOT OR COLD WATER LINES!

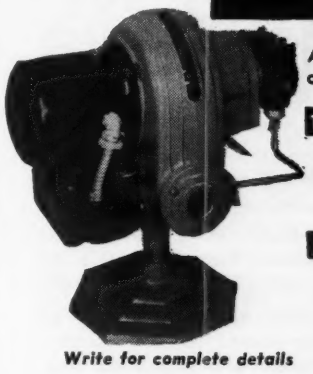
Eliminate dangerous and annoying water hammer with MAR-COIL silencers. Available in five sizes to correct every job. Install easily in upright position and require no adjustment. Made of all polished brass and copper. For Homes, Apartments and Industry. On Tankless Heaters, Washing Machines, Dishwashers, Pumps, etc. Install as near as possible to the fixture that hammers.

We also make: **BOILER STANDS • FUEL OIL TANK GAUGES • TANKLESS HEATERS • TEMPERING VALVES • STEAM MOTORIZED GATE VALVES**

MAR-COIL HEATER CO.
200 PATERSON PLANK ROAD, UNION CITY, N. J.

important OIL BURNER FACTS ABOUT Radiant

THE SERVICEMAN'S BURNER



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1. RADIANT burner performance is equal to the highest price burner. Yet they are priced to meet the lowest competition, even on project work.
2. Heavy sales are due to
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   —ease of installation and servicing
   —factory guarantee
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Write for complete details

New model equipped with Shell designed combustion head

RADIANT UTILITIES CORP.
8817 18th AVE., BROOKLYN 14, N. Y.

RADIANT OIL BURNER

Reader's Problems

Q. Last September we installed a complete warm air system in a story and a half house. Firing rate of this forced air job is three quarts; burner is low pressure. With all new ducts and cold air returns, the system seemed to work well and had excellent efficiency.

Called back a few months ago, we noticed the false ceiling in the kitchen, made of sheet rock, was peppered with small brown spots. Pushing a hole through this outside layer, we found the upper ceiling, which is about one inch above, covered with small particles of condensed water. No leaks could be found anywhere, but the air between the joists and where the condensation is greatest seemed to be much colder than other partitions which we could feel.

The customer felt that this condition was caused by too much humidity from the automatic humidifier, but we feel this is not the case. We have covered the holes and tried to get the water droplets to reform but so far to no avail.

Have you ever run into this condition? What might the answer be? We hate to go ahead and fix up the ceiling only to have the same condition reoccur.

O. C. W. M., Oneonta, N. Y.

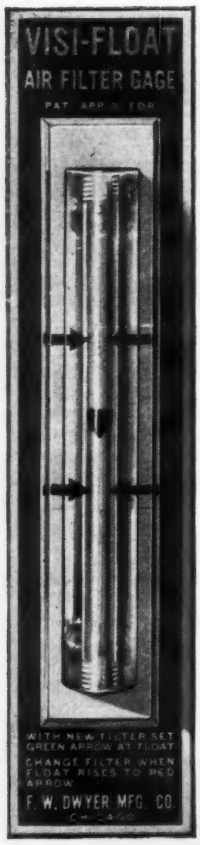
A. You simply are facing an exaggerated example which shows the need for a vapor barrier. A vapor barrier prevents inside air, with relative humidity higher than say 25%, from finding its way into cool spaces between inside and outside walls and there depositing moisture.

The air in a kitchen usually is far more moisture-laden than the air in the other rooms of a house. Cooking is responsible for this, particularly cooking by gas. Fog or frost on the inside of kitchen windows, appearing on cold days when considerable cooking is done, often shows this.

Cutting off the humidifier in the furnace probably will not end the trouble in this house, yet use of the humidifier is increasing the humidity in the kitchen and increasing the trouble.

In this home, inside air is flowing freely through the space between the false ceiling and the upper ceiling. Moisture is being deposited in this space, which is cool, and this moisture comes from the inside air.

As a remedy, seal air-leaks in the lower, false ceiling to prevent air from escaping upwards through it into the cool space. The job must be done thoroughly; work as though you were trying to make the celiing air-tight and water-tight. Eliminate all leaks at the edges of the wallboard. Then give the ceiling two or three good water-proofing coats of aluminum paint or water-proof varnish. If possible, in addition increase the winter temperature of the cold space and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Send for descriptive folder.

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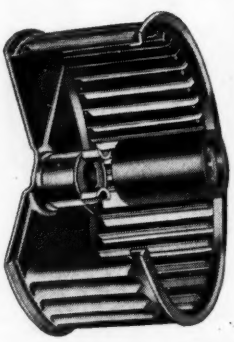

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Standardization on L-R Couplings cuts inventories. It's convenient and economical as most fan makers supply fans with L-R jaws on hubs at no extra cost. Simple assembly allows quick, low-cost installation, even in close, dark places.

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ALSO MFRS. UNIVERSAL JOINTS AND VARIABLE SPEED TRANSMISSIONS

upper ceiling by installing highly effective building insulation above the upper ceiling.

You should not take the blame for the trouble and should not pay for remedying it. Faulty construction of the kitchen ceiling is to blame. This faulty construction caused inside air, made properly humid by cooking and by proper operation of the modern heating plant, to find its way into a cool space and deposit moisture there.

* * *

Q. Can you tell me the name of a chemical that can be placed in a hot firebox of a steel furnace to locate small leaks? The chemical I mean seeps through cracks and pinholes and forms a noticeable deposit on the outside.

L. D. H. C., Bend, Oregon

A. A check-up on the methods used for locating air leaks in furnaces indicates that as far as can be determined a chemical of the type you describe is not being used widely by furnace dealers and manufacturers. To locate air leaks where these give trouble, many furnace dealers remove the furnace jackets and use a candle flame to find the leaks; with the furnace fired and the draft as high as feasible (the smokepipe draft regulator is blocked in its maximum draft position) the candle flame is sucked into an air leak.

Some dealers remove the jacket of a troublesome furnace, adjust for a smoky flame and for plus pressure on the entire furnace (they block off the smokepipe to obtain the plus pressure) and find the leaks by looking for the smoke that escapes from them. Soot and smudge marks. which can be found later, are formed at the location of the leaks by operating the furnace a few mniutes in this way.

The fumes formed as a result of throwing ordinary table salt into an oil flame will, on escaping through leaks, form white deposits that may be helpful and may be what you are looking for. You might try using table salt in this way. Again, the furnace outside jacket should be removed and there should be a plus pressure in the furnace to cause the salt fumes to escape through the air leaks.

Q. We need specific data to help sell the idea that at present prices domestic fueloil is cheap and efficient compared to solid fuels. This is for conservative owners who always have heated by coal and still do, of whom there is a great number. We want to tell a coal-fired owner his efficiency, compare it with high oil efficiency, and wind up proving a saving. Exact figures for hair-splitters using cheap coal in homes and industrial plants are needed.

G. W. K., Columbus, Ohio.

A. Certain coal-fired plants, though you may think they are the exceptions, operate at fair to high efficiencies. Many may operate at 45% to 55% efficiency, but in selling burners you may encounter a coal-fired plant achieving 60% to 75% efficiency. The expert use of combustion testing instruments, together with judging whether or not automatic control will save fuel by eliminating overheataing, will help you judge the efficiency and waste of fuel where coal is hand-fired.

Oilburner conversion installations op-

PREFERRED
DRAFT-A-JUSTORS

Cut Fuel Consumption by

10% TO 30%

The *Preferred* Draft-A-Juster is the original, patented Draft-A-Juster . . . improved to include the latest in engineering developments.

Stainless steel bearings and weather resistant metals provide long-life service without breakdown due to rust or wear . . . assure *continuous* fuel savings.

Millions now in satisfactory use.

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Industrial sizes from 2' x 2' to 5' x 12'.

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Manufactured by
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erate at widely different efficiencies depending largely on the stack temperatures minimum for the particular furnaces and boilers with these properly oil-fired, on the excellence of the burners and fireboxes which are installed, and on the quality of combustion as gauged by CO_2 and smoke test readings. In addition, fueloil bills often can be cut 20% to 40% through expert baffling of the combustion spaces or flues of the furnaces and boilers, and by expert efforts to adapt the heating plants to the oil-firing.

* * *

Q. I have read your Journal for April 1950 and would like to refer in particular to the answer to the question on page 185, dealing with smoking in an oversize boiler, raised by C. A. H. of Newark.

Apart from the point you make concerning the on/off periods of the burner, there is the fact that with an oversize combustion chamber, the rate of heat loss from the flame owing to the large area will be very high, leading to rapid cooling of the flame, particularly from the extremities. In such circumstances, it is possible that by increasing the CO_2, the smoke would be reduced owing to the higher flame temperature which would be obtained. The question does illustrate the point that it is possible to have a boiler too large for the work it has to do.

G. F. J., London.

A. You prove the thoughts of a fuel-oil-minded Londoner are helpful to a contractor working on his own oil-boiler in Newark, New Jersey.

You agree with the part of our answer that suggests considering switching to higher side walls for the firebox, and this would reduce the rate of heat loss from the flame and therefore increase the flame temperature.

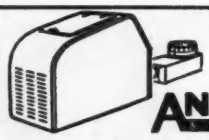
The inquirer said that even setting for as low as 6% CO_2 wouldn't keep clean his firing door-liner. This was interpreted as meaning that in desperation he tried low CO_2 settings as 6%, only after he had tried the higher CO_2 settings he usually uses successfully. Of course it is true that on many installations adjusting for outrageously low CO_2 chills the flames and produces signs of incomplete combustion. This is particularly true for those installations which give notably clean combustion when set for, say, 11% to 13% CO_2.

* * *

Q. In respect of the question raised on page 188 (April 1950 issue) on the definition of a B.Th.U. by J. M. of Winchester, Ind., there is a very important consideration which should be realized here. It is certain that a B.Th.U. released at a high temperature, say 2500°F., is not the same as a B.Th.U. released at a temperature of, say, 180° F. The energy available in the first case is very much greater than that in the latter and more work can be done with heat at this higher temperature level. Various attempts have been made to assign a value to the heat released at different temperature levels, one authority, M. W. Thring giving different "virtues" to heat at different temperatures, and another, Dr. Oscar Faber working on the basis of the Carnot cycle giving a value to the heat measured in "Carnots." It is a subject on which a great deal more information and scientific investigation is required.

G. F. J., London.

A. It is ineffably suitable that this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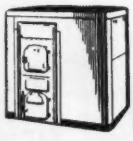
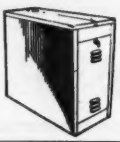

ANCHOR AIRE
COAL FIRED FURNACES

ANCHOR OIL BURNER
OIL BURNERS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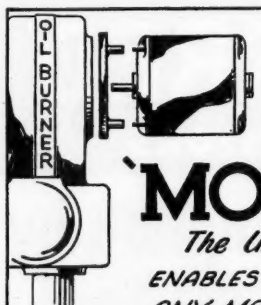

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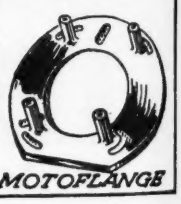
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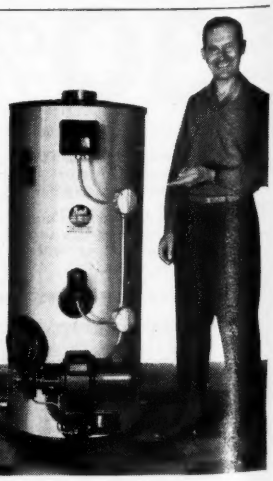
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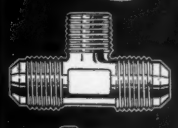

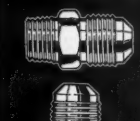

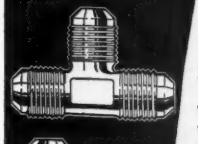

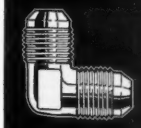

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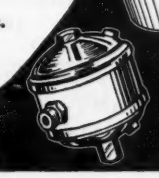

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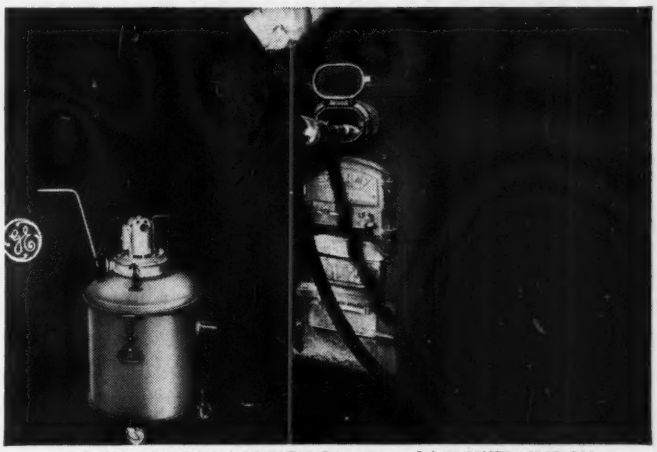
MAKE FURNACE-CLEANING CALLS
PAY OFF!

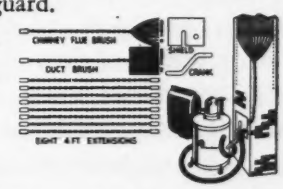


G-E AVI-F908 FURNACE CLEANER a Powerful BLOWER-SUCTION Machine—engineered to do the job Quickly, Thoroughly and at Low Cost

This easy-to-handle, high-vacuum cleaner (1 full h. p. AC-DC; 43″ water lift; weight only 51 lbs.) makes a hit with clean-up crews . . . steps up their productiveness . . . leaves boilers and cellars cleaner.

Power unit is readily removed from tank and converted into a powerful BLOWER, by removing bag and substituting special coupling and guard.

G-E CHIMNEY-CLEANING AND AIR-DUCT EQUIPMENT For Use with Model AVI-F908▶ Furnace Cleaner



Another ingenious contribution to speed clean-up jobs is the G-E Chimney-Cleaning Set. This equipment brings down the soot and gets it into the machine with a minimum of muss and fuss.

Revolving handle and vacuum hose fit through special shield which keeps falling soot from escaping into the cellar. As shown, set includes Shield, Crank, Chimney Flue Brush, Duct Brush and eight 4 ft. extensions.

YOUR FIRST STEP **toward Lower Furnace Cleaning Costs and MORE Satisfied Customers is taken when you mail coupon below for this new G-E folder**

Furnace and Boiler Cleaners

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, Dept. 22-1625
1285 Boston Ave., Bridgeport 2, Conn.

Certainly, I'm interested in more efficient Furnace Cleaning Equipment. Send the G-E Folder by return mail.

Name.....

Firm.....

Address.....

City ..... Zone ..... State .....

$ $ $ $ $ $ $ $ $ $ $ $ $

YOU CAN MAKE a DOLLAR a MINUTE

installing Round, Square, Rectangular, or Pear-Shaped

PANELOX (Trade Mark Reg.) **HEAT RESISTANT STAINLESS STEEL COMBUSTION CHAMBERS**

Installed in minutes. Heat up in seconds. Stand up for years. Reduce noise, smoke, soot and oily film. Provide more even heat. Require no back-fill. No cement. No tools. Panels slide together easily. Light weight. Easy to handle. No breakage.

Write, Wire or phone for sizes, prices and Dealer Discount

STEFCO STEEL CO. Heating Division

Dept. FO Michigan City, Indiana

$ $ $ $ $ $ $ $ $ $ $ $ $ $ $

WHY IS A SIMPLEX SIMPLE TO SERVICE?

SIMPLEX PNEUMATIC TURBINE TYPE HEAVY OIL BURNERS

Every SIMPLEX has a minimum of moving parts to get out of order. Every SIMPLEX uses a **standard**, nationally recognized motor.

Add the fact that SIMPLEX heavy oil burners are priced for a whale of a dealer profit, and you know SIMPLEX offers an attractive dealer proposition.

A note on your letterhead brings the details.

SIMPLEX

SINCE 1910

SIMPLEX OIL HEATING CORP.

11 Park Place • New York 7, N. Y.

discussion of the subtleties of the British thermal unit should originate in your city. Your data add weightily to the arguments for the extremely high temperature combustion already much favored by certain oilburner experts whose forte lies in the design and construction of nearly perfect fireboxes.

Taken out of the realm of higher physics and made suitable for use by American salesmen, your excellent point may wind up with the sales assertion that on the old basis, still used however in our trade schools and engineering schools, a certain oil-fired unit is more than 100% efficient because of the extremely high temperature of its flame. The salesman might be able to point out that the oil used is properly reported to produce 138,000 Btu's per gallon, but by dint of last-minute scientific investigations produces magically in his high-temperature-combustion oil-boiler or oil-furnace 160,000 Btu's per gallon. A Brooklyn oilburner salesman does not need even this much of a tip-off from an English scientist.

Q. The writer read with great interest your July 1950 issue which covered heavy oilburners in some detail.

Will you please advise if your engineering department might have any data on a set-up for using horizontal rotary oilburners in large boilers (10,000 to 15,000 ft. of steam) with a partly detachable combustion chamber containing the checkerboard secondary air?

We have an account that was required to change from heavy oil to soft coal during the war (1943). They installed a stoker to cover their firing problems. At times we have tried to get them to switch to fueloil but the cost has ruled it out.

We had in mind a set-up on a steel frame, with mounting plate and checkerboard permanently installed for the oilburner (burner mounted on the large front plate). Then install the stoker on a similar set-up. In the event of serious interruption of either type of fuel supply they could pull out and install the other in a matter of hours rather than a two-day change-over.

The weight of these respective units would be fairly high but with a Clark truck the change could be made comparatively easily.

Your advices and/or suggestions will be very greatly appreciated.

F. T. G., Somerville, N. J.

A. The constructive and creative bent of your idea was well appreciated by those who read your inquiry. Properly carried out by a determined equipment dealer who is unusually capable with respect to the principles and the practical aspects involved, the idea might produce an installation of great interest to many equipment dealers and manufacturers.

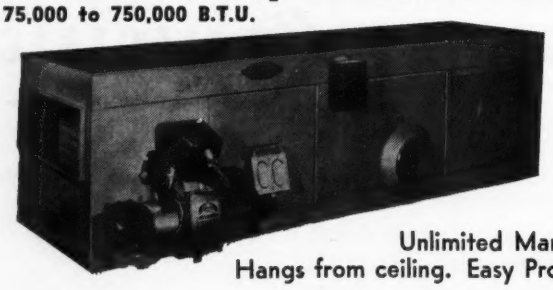
It is likely that applying to just one installation the required engineering and design work will not be profitable.

The cost of the material and labor may be higher than the cost of attaining the objective by approaching the problem differently. You point out the two units will weigh much; this gives an idea of their high cost, as much material and labor will go into the large, heavy units.

It seems the stoker will not stay in place when the oilburner is used, according to your idea. Removing the retort and hearth or grates of the stoker may present a big problem. Leaving in the

ARTCRAFT Suspended Furnace

75,000 to 750,000 B.T.U.



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Turn Your DEFECTIVE PARTS into CA$H

We will pay you $3.00 each for the following STACK RELAYS

MINN.-HONEYWELL	MERCOID	PERFEX	PENN	
RA116	JMI	5200	670	DELCO-COA
RA117	JM	5500	672	
R116	KMI	5520		D-L - CA701
R117				

We will pay you $2.00 each for the following FUEL UNITS

WEBSTER SUNDSTRAND TUTHILL

We will pay you $1.00 each for the following OIL BURNER IGNITION TRANSFORMERS

WEBSTER JEFFERSON SUPER TIMKEN
DELCO WAYNE GILBARCO

THIS OFFER GOOD FOR 30 DAYS ONLY

ALBANY AUTOMATIC SUPPLY CO. INC.

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NEW YORK TECH
America's Outstanding School of
OIL BURNER
INSTALLATION
AND SERVICING
The School to Think of if:
YOU HAVE MEN TO TRAIN
or
REQUIRE TRAINED SERVICEMEN
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NEW YORK TECHNICAL INSTITUTE
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OIL & GAS FIRED
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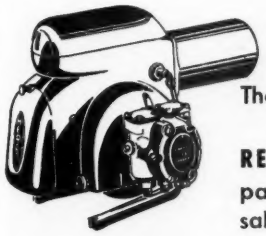
General Automatic Products Corp., 2300 Sinclair Lane, Balto. 13, Md.

HERCO
Profits Last Longer

. . . because when you sell HERCO, you are selling years of trouble-free performance. This means that your profits are protected from expensive service calls and bothersome complaints.



The *Handsome* **HERCO RESIDENTIAL** packs *plenty* of sales appeal...

. . . Here's a burner that will give your customers everything they could ask for in a fine oil burner . . . beauty, quiet operation, "built-in" efficiency. Unusual economy is made possible by the Thriftifier—an exclusive HERCO invention that provides a hotter, thriftier fire—saves oil. Built in three different sizes to fit *every* housing requirement.

Ask about the
HERCO STAINLESS STEEL OIL HEAT UNIT

For genuine value, you just can't beat it. This warm air unit has a sturdy, double-walled stainless steel combustion chamber that gives perfect heat delivery. Its exclusive "heat economizer" actually *pre-heats* cold incoming air—a feature that spells savings to the customer. Write for details.

HERCO OIL BURNER CORP., LANCASTER, PA.

HERCO
The Oil-Thrifty
OIL BURNER

boiler the firing parts of the stoker and covering them with firebrick when oil is to be used, would be better perhaps. However, firing the oilburner over such an arrangement, which then would be the oilburner firebox floor, probably is ruled out because the boiler setting is not high enough and can be made high enough only at excessive expense.

Determined to apply your idea, you could mount the oilburner secondary air arrangement on the frontplate to which the burner is secured, eliminating complications of a checkboard arrangement under the firebox floor. Use the same kind of a cylindrical Dutch oven arrangement often used when Scotch boilers and marine boilers are fired by horizontal rotary cup burners.

In overall, probably less expensive and more satisfactory and dependable results can be secured by installing a boiler especially for oil, leaving the now-installed boiler stoker-fired as it is. Check on the costs of installing (1) a modern package unit consisting of a boiler fired by an integral oilburner, and (2) a modern oil-boiler to be fired by the owner's old horizontal rotary cup oilburner. The cost of a boiler for, say, 25 to 50 gph is not great compared to the cost of the work you are considering doing.

* * *

Q. How many gallons of #4 fueloil is required to produce 1,000 ft. of low pressure steam? The steam is being measured through a meter. The steam is being produced from a modern high pressure package boiler.

C. A. F., Bronx, N. Y.

A. You can consider the steam as having a volume of 20 cu. ft. per pound, if the pressure hovers around five pounds gauge pressure, with 225° temperature, and with 960 Btu's needed to change a pound of water at 225° to a pound of steam at 225°. Consider the steam saturated, no superheating.

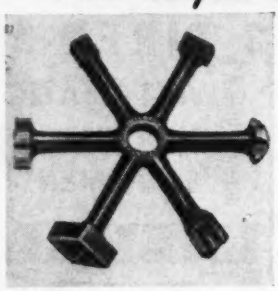
If the input water to the boiler is at 125° average, or 100° cooler than the steam, 100 Btu is added to the 960 Btu mentioned above. One pound of steam then equals 1,060 Btu boiler output. As the 1,000 cu. ft. of steam you mention weighs 50 lbs. (obtained by dividing the 20 cu. ft. per pound into the 1,000 cu. ft. that interests you) then multiplying 1,060 by 50 gives 53,000 Btu as the heat content of 1,000 cu. ft. of steam.

Oil containing 140,000 Btu per gallon and fired at 70% overall boiler efficiency provides a boiler output of 98,000 Btu per gallon of oil used. Divide this into 53,000 and you find that on this basis it takes .54 gallons of oil to produce 1,000 cu. ft. of steam. You can easily work this out substituting other values for the efficiency and heat content of the oil, if you believe other values are more suitable to your installation.

We are concerned about two oddities in your question. First, rarely are steam flow meters encountered in low pressure steam lines. If this meter is a high pressure steam instrument, perhaps left over from days when high pressure steam was used in this system, get in touch with the manufacturer of the meter to find out if it has been adapted to low pressure measuring and if it can be depended upon to give reasonably accurate and dependable measurements.

Second, while we have worked out the problem in cubic feet because you asked about 1,000 ft. of steam, usually steam flow meters deal in pounds of steam. Check to make certain you should

New Style **UNIVERSAL**
Fill Box
WRENCH



- **GUARANTEED UNBREAKABLE**
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ONLY $1.50

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We also manufacture Fill Boxes and Duplex Tank Bushings

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555 3rd Ave., Elizabeth, N. J.

CLEANER Oil Burner Liquid
for all
OIL BURNERS

MILOS SYSTEM DEVICES REG. U.S. PAT. OFF.

WHAT IT DOES:

- Helps remove soot.
- Increases B.T.U.'s.
- Helps dissolve and remove gum deposits, sludge and water.
- Helps overcome oil odors.
- Retards rust and corrosion.

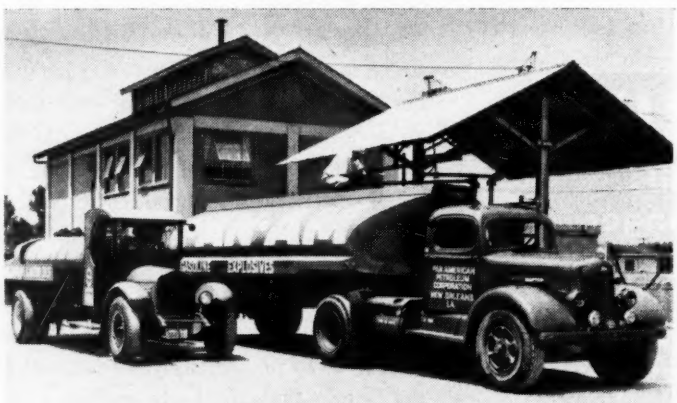
Write for prices and dealer discounts!
MILOS SYSTEM DEVICES
94 Lakeview Avenue Clifton, New Jersey

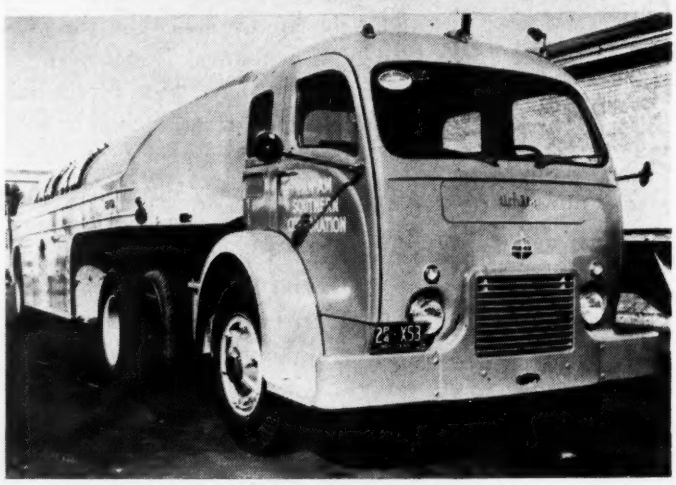
not have asked about pounds, not feet, of steam. You can handle the problem in pounds of steam by using our figure, or a similar figure that suits the conditions better, of 1,060 Btu equalling the boiler load of one pound of steam.

◈

THERMOBLOC DIV., Prat-Daniel Corp., East Port Chester, Conn., offers data tables for computing heat loss and figuring heat requirements. The tables are incorporated in a bulletin describing the Thermobloc self-contained, direct-fired industrial unit heater. The tables cover outdoor design temperatures, common types of industrial construction, heat losses through window and door infiltration and a table of heating constants. Also available are data sheets showing how direct-fired unit heaters can be used to temper make-up air, process heating and other special applications.

KOHLER CO., Kohler, Wis., describes its complete line of hand, stoker and oil-fired boilers in a new 1950 catalog. The 16-page illustrated catalog offers information on the selection of boilers for commercial and domestic installation.





A quarter of century of progress *in petroleum tank trucks. The old White Model 51, at the left in the upper photo, was placed in service in 1925 by Pan American Petroleum Corp., New Orleans. In 1937 it was replaced by the White Super Power tractor, with more than double tank capacity. The lower picture shows the newest type tanker, a new White 3000 unit, in operation for Pan-Am Southern Corp., Memphis, Tenn.*

McCORKLE CONTROLS *are designed to* **GIVE** *—not require* **SERVICE**
for Vaporizing Oil Burners

- **Patented dual blade bi-metal assembly —insures trouble-free operation—supplies a wide margin of extra power.**
- **More rapid heat transmission.**
- **Adjustable snap acting Micro-switch.**
- **Heavier, more rugged construction.**

Less service means greater customer satisfaction—increased profits—more new business

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RAYFIELD BURNERS
FOR No. 4 or No. 5
HEAVY OILS

MODEL JR.
1.00 to 5.00 GALS./HR.
MODEL D4
3.00 to 12.00 GALS./HR.

1. Fully Automatic
2. Self Cleaning Nozzle
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4. All Electric Operation
5. Pays for itself from savings
6. Burns the cheaper No. 5 oil

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AUTOMATIC

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1. Low in Price—Automatic—Easy Installation
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3. For use with Coal, Gas, Oil or Wood
4. Increases output of ANY gravity warm air furnace
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6. The hotter the stack—the more heat reclaimed
7. Saves wasted heat now going up the chimney

PATENTED COMBUSTION
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OILS TO
#3 GRADE
2 MODELS
1.00 to 3.00 GALS./HR. CAPACITY

1. Amazing Economy 12 to 15% CO_2
2. Clean boilers with perfected combustion
3. Burns Catalytic oils easily
4. Quiet—No Vibration or pulsation
5. Cuts user's oil bills 14 to 36%
6. The ideal replacement oil burner

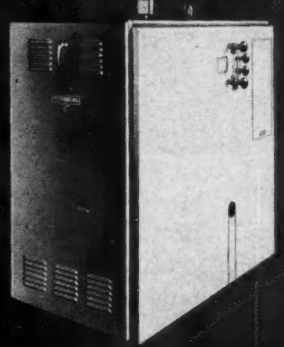
C. L. RAYFIELD COMPANY • 2010-18 SO. HALSTED ST. • CHICAGO 8, ILL.

ALFRED ALLEN WATTS CO., INC., New York 7, N. Y., describes its line of Vuethru Metersets in a mailing piece which incorporates an order form. Shown in reduced form is a sample which fits all makes of printing meters. The second portion of the mailer contains a price list for Vuethru sets with the order form folded in as the thrid part of the piece. The sets feature a translucent sheet in the first position, backed with a double-face carbon, an extended second and third copy on card stock.

AUER REGISTER CO., Cleveland 14, Ohio, in its Register Book No. 49 covers its complete line of models for air conditioning. A general index near the front of the book lists the entire group of models and types that are covered, with page numbers where data on them are found. For each type there is included information on sizes, prices and other pertinent specifications. Most types are accompanied by brief copy to highlight features and suggest applications.

COLEMAN CO., INC., Wichita 1, Kans., has prepared a catalog on its entire line of home heating equipment, designed especially for use by building contractors and architects. Included are forced air and gravity furnaces, floor and wall furnaces and water heaters. The Coleman Blend-Air warm air heating system is described in detail, emphasizing it as a pre-engineered complete system, with all parts, including its 3½" diameter ducts, prefabricated at the Coleman factory.

The FAMOUS FITZGIBBONS "400"



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OF STEEL BOILERS
BUILT BY
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MOST ECONOMICAL IN FUEL
THE FITZGIBBONS BOILER

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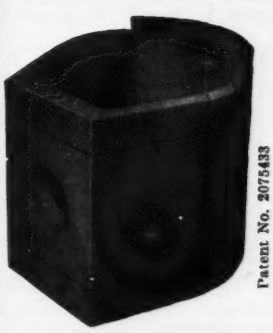
QUICK HEAT UP



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COMBUSTION CHAMBERS
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Write for our new Catalog which contains complete information and specifications on Combustion Chambers.

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PHILADELPHIA 4, PA.

Looking for Results?

TRY KEK on that TOUGH JOB
GET ANY BOILER CLEAN
SAFELY and SURELY

TRY OUR OTHER QUALITY PRODUCTS TOO!

- KENBRIC Soot Remover — Bricks and Rods
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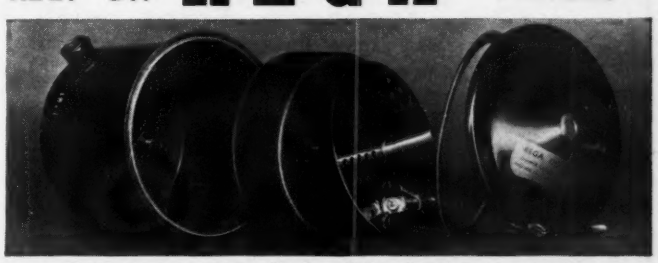
YOU CAN RELY ON REGA OIL BURNER FILTERS



- Oil flows upward—allowing dirt and water to separate.
- 1½" sludge trap prolongs life of cartridge.
- Oil cannot by-pass filtering element.
- Cartridge easily changed by removing thumb screw.

SEND FOR FULL DETAILS NOW!
REGA MFG. CO., 99 MT. HOPE AVENUE, ROCHESTER 20, N. Y.

QUICKLY AND EASILY INSTALLED - -

REX RoTo Combustion Chambers

IN ANY STYLE FURNACE—WITH ANY MAKE BURNER

The user benefits through higher combustion efficiency and longer life. The installer through the easy and quick installations. No cutting or cementing necessary.

"NO BREAKAGE" PACKAGING

REX ROTO Combustion Chambers are individually packed in our exclusive TIME TESTED-CONSUMER APPROVED shipping container. It is designed to withstand numerous handlings.

EASTERN BRANCH REX CLAY PRODUCTS INC., ALBANY, N. Y.

Instant COMBUSTION EFFICIENCY

Immediate SAVINGS

WRITE TODAY

GET FULL INFORMATION

REX RoTo CORP. 14400 DEXTER BLVD. DETROIT 6, MICHIGAN

The Contest Winners

(*Begins on page* 53)

programs. Women enjoy being guest critics and receiving nylon money if their letters happen to be selected. Another fueloil and oilheating retailer has time, dial setting and radio station over which his program is presented printed on posters which he displays in his windows and on his store walls. Still another uses a small portion of an occasional newspaper display advertisement to draw attention to his ether activities. With such encouragement, radio can and will do a bang up merchandising job, always with the proviso that the programs selected are timed and planned with a little care and finesse.

From 8:00 to 9:00 a.m. seems the best time to reach the feminine listener before she tears out of the house on a shopping expedition. From 6:00 to 7:00 p.m. is family time at the dinner table and they listen invariably as a group. And there you have it, R-X-formula for oilheating dealers radiocasting activities, timing, programming and a little assistance in calling attention to the specific radio offering.

3rd Prize: GEORGE E. TOLES, HAMBURG, N. Y.

A VALUABLE PROSPECT LIST has been developed through a unique contest in which residents were invited to make a bid on a $395 oilburner. A complete installation was offered, with an unconditional guarantee on parts and service for one full year, to the highest bidder at the price bid by the contest winner.

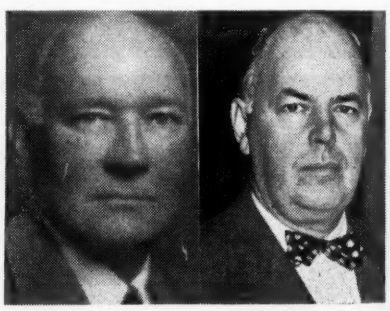
The winner received a rotary oilburner, master stack relay, limit control, room thermostat, draft regulator, 275 gallon oil storage tank, oil tank gauge and tank signal, together with all wiring and piping.

Contestants submitted a bid for the burner by clipping a coupon in a newspaper advertisement and mailing it to the company. The coupon carried space for the name and address of the contestant and the amount of his bid.

Bids were judged at the firm's showrooms and the winner's name published. Entering the contest carried no obligation to buy, but the coupons represented an active and interested prospect list.

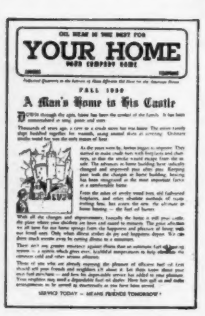
◈

H. H. Fuller and *C. F. McGoughran* have been named vice presidents, Sinclair Refining Co., New York, N. Y. Mr. Fuller has been manager of bulk sales since January 1928 and, as vice-president, will direct all wholesale activities for the company. Mr. McGoughran joined the organization in Chicago in 1920, became general sales manager in April 1949, in which position he will continue.



Fuller McGoughran

Build Customer Goodwill and Increase Sales with "YOUR HOME"



An attractive, 3 color, 4 page quarterly publication, *imprinted with your name and apparently published by you.* "YOUR HOME" will build customer goodwill, increase heating equipment sales. You can send this highly effective pamphlet to each of your customers, *regularly,* at a very small cost. Send for sample copies and prices NOW.

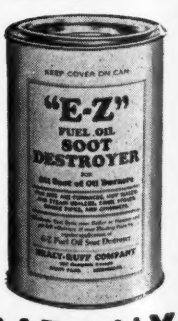
— • —

Ask for Free Samples of our personalized Christmas and New Year Greeting Cards designed especially for the Fuel Oil Trade.

GRIECO PRINTING COMPANY
353 36TH STREET BROOKLYN 32, N. Y.

E-Z Extra PROFIT

Soot Destroyer



(*For fuel oil soot only.*) Keep a supply on every Service Truck. Sell cleaning jobs. Use *E-Z.* One application does a thorough soot cleaning job. Saves time. Pays extra profit. Sell one-lb. cans to customers. If your Distributor cannot supply you, order direct.

No. 1 Pkg. approx. 1 lb. . . . List $1.00 ea.
No. 5 Pkg. approx. 5 lbs. . . List $4.50 ea.

Special discount to Distributors on quantities.

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SAYBOLT Calibration Can Save You Money

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Saybolt Calibration Service prevents profit leaks and pays for itself many times over in fueloil savings. Contact any of the 50 Saybolt offices in the United States and foreign ports, or write to:

E. W. SAYBOLT & COMPANY
Serving the Petroleum Industry for Over Half a Century
265 BAYWAY **ELIZABETH 2, N. J.**

Oilheating Trends

(*Begins on page 12*)

that haunted us three years ago, is back with gusto. In the May study it didn't show up at all. Folks are probably not so much concerned on this point with our actually running short of oil as they would be over what they think is a chance to revive rationing. Notice that the important May factor of "Believe business will slump" has vanished.

FUELOIL RESTRICTION: About one-fifth of all reporting fueloil distributors have had some form of restriction placed upon their supplies for the coming winter. These ratios by sections are: New England 20%; Mid-Atlantic 30%; Midwest 18%; the South 25%, and none so reported from the Pacific Northwest. Most of the restrictions simply limit the rate of increase in demand, ranging from 10% to 30%. But in each area there are a few that promise no gain and some few even cut the quantity allowed. Taking all of these moves into account, those New England distributors having restrictions will average a 12% rise in supply; Mid-Atlantic restrictions average 17% up; the Midwest averages 2% down. Most of these firms can still cover their needs in the spot market but their regular suppliers won't have enough. Of course don't forget that four-fifths have no straitjacket.

FUELOIL STOCKS: Local fueloil distributors throughout the area East of the Rockies on September 1 had in their bulk tanks about two and a half million barrels more of No. 2 or 3 heating oil

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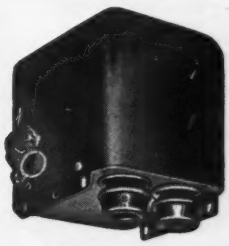

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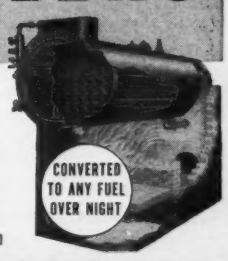

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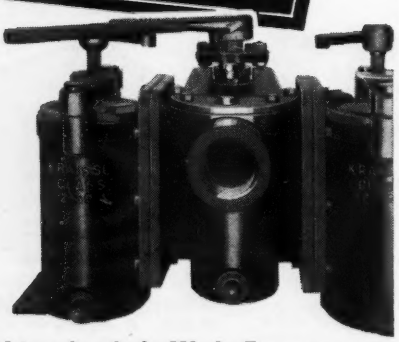

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than on the same date of 1949. This is an improvement of course, but not as much of a gain as primary oil suppliers have been thinking. The fact is that these local stocks were near their peak points in each year by the start of the fall season. This year the bulk tanks were 75.3% filled; a year ago they were 70.1% filled. Three-fourths filled is about as high as you can get in a large group, due to the accident of delivery. They can never be all full or all empty.

Estimated Local Bulk Stocks

NO. 2 OR NO. 3 HEATING OIL

	Sept. 1, 1950 (Bbl.)	*Sept. 1, 1949 (Bbl.)*
New England	2,099,331	1,291,896
Mid-Atlantic	10,345,332	9,861,860
The South	1,154,360	923,089
Midwest	4,196,083	3,161,448
EAST OF ROCKIES	17,795,106	15,238,293

The table shows an important rise in New England stocks but not much in the other areas. The total bulk stocks in local tanks are up 16.4%. No check was made this month of consumer fill-ups, but they cannot change greatly from year to year, since three-fourths of all consumers are on automatic deliveries, and they get oil when their tank is low enough to take a decent sized drop, not before. The August 1 check of customer fill-ups showed an improvement over the previous year of about 10%. Assuming four million consumers East of the Rockies, and an average tank condition of containing about five barrels, a ten per cent better than average condition would represent only about two million barrels.

The official A.P.I. stocks of distillate fueloil in primary terminals at refineries or in transport on September 9 East of the Rockies were 57,126,000 Bbls. This compares with 62,159,000 Bbls. on the corresponding date last year. It's a drop of about five million barrels, which is just about offset by the improvement in local bulk and consumer stocks. So the industry has still got to step up its runs or yields to meet the winter's increase.

DEALER COMMENTS: Typical of comments of the month are these: . . . "Should put on ceilings as of May 1" . . . "It's only fair to give our good men a pay raise to offset rising prices" . . . "We are refusing new work because of trouble in getting tanks and baseboard heating element" . . . "Dealers complain about a 10% rise in burner prices but not the boiler advance of 9% or tanks 100%" . . . "Boilers and tanks show signs of very tight supply" . . . "With both fuel lines, we sell oilheating—it's best" . . . "Majors raised price 6/10¢ to reseller and retail. Our profit went down 1.4%. Our profit in January 1940 was 37.7% on fueloil—why is it 50% less today?" . . . "Increased prices and slow deliveries are slowing our sales" . . . "High oil prices and the Korean war holding up sales" . . . "Let's have a cold winter for a change" . . . "The usual fall jam is on, but people are more patient over installation delays" . . . "Tanks and a few other items are difficult, but in general the situation is much better than we expected" . . . "The bad men are with us again—we have had some items increased over 30%—old companies are still trying to hold prices" . . . "Gas is now restricted. October burner prospects are better but it's too late to do much" . . . "I lose sales because I tell the customer I cannot get his size unit for a month. Competition will lie, telling him the size he needs is in stock, when it isn't and hasn't been."